

Digitized by the Internet Archive
in 2024 with funding from
University of Toronto

<https://archive.org/details/39222304060028>

CA 20N
PMC
1990
P27 c.2

PEOPLE AND SKILLS IN THE NEW GLOBAL ECONOMY



Ontario



6



PEOPLE AND SKILLS IN THE NEW GLOBAL ECONOMY



PREFACE

This report presents the research and conclusions reached by the Premier's Council in its review of education, training and labour adjustment issues facing Ontario. The Council's human resource agenda was undertaken as an extension of the economic strategy developed in its first agenda, which culminated in the release of the report, *Competing in the New Global Economy* in April, 1988.

Much of the research and consultation for the report was carried out by the Council members themselves. Three Council subcommittees were established to investigate these issues by canvassing a variety of interest groups and consulting with experts in the education, skills training and labour market adjustment fields. A broad array of perspectives were gathered, ranging from the accounts of workers who had experienced the upheaval that accompanies job loss to the challenges faced by educators who must confront, daily, issues that were almost unknown to their colleagues a generation earlier.

From these public discussions, and in the course of the Council's own lengthy deliberations, a new understanding of the issues emerged and many fresh approaches were developed. The management and labour representatives on the Council, recognizing the need for joint action, achieved a remarkable degree of consensus in many areas. However, there were a few areas where differences in perspective became apparent. Many of these differences tended to revolve around attitudes towards government intervention.

Specifically, members of the Council continued to debate but not entirely resolve the question of how to increase the investment in training in industry. The labour and business members of the Council supported different measures to enhance the amount and quality of training; nevertheless, they were in full agreement on the urgency and importance of achieving this goal of more and better training for workers.

The Council is confident that it has moved the debate on human resource issues along considerably and has focused the discussion so that it can now be continued productively in the broader public domain. The report contains a great deal of thoughtful analysis and a series of recommendations that deserve careful consideration by both levels of government, as well as other stakeholders in the business, labour, education and community spheres. The Council also expects that the government will be guided by its advice in developing cooperative approaches to ensure that labour and management's mutual interests are served.

This report could not have been written without the invaluable assistance that each of these players provided. It is their advice and insights that will enable this report to contribute meaningfully to the ongoing debate in Canada over how our economy, our society and our people as individuals can adapt to and benefit from the new global realities affecting how we live and work today.

PREMIER'S COUNCIL MEMBERS AND STAFF

PREMIER DAVID PETERSON,
Chairman

DAN ALEXANDER,
President and Chief Executive Officer of St. Marys Paper
Inc., Sault Ste. Marie

STUART G. ANGUS,
President of The Proctor & Redfern Group, Don Mills

BOB BEAMISH,
Chairman and Chief Executive Officer of the Woodbridge
Group, Mississauga

DAVID R. BEATTY,
President of Weston Foods Ltd., Toronto

WILLIAM BLUNDELL,
Chairman and Chief Executive Officer of General Electric
Canada Inc., Mississauga

C. HENRY BREHAUT,
Senior Vice-President, Canadian Operations of Placer Dome
Inc., Toronto

RODERICK M. BRYDEN,
Chairman and Chief Executive Officer of SHL Systemhouse
Inc., Ottawa

W. EDMUND CLARK,
Chairman and Chief Executive Officer of Morgan Financial
Corporation, Toronto

LARRY D. CLARKE,
Chairman of Spar Aerospace Limited, Mississauga

HON. SEAN CONWAY,
Minister of Education, Minister of Skills Development and
Minister of Colleges and Universities

SUSAN ENG,
Attorney with the law firm of Blaney, McMurtry and Stapells,
Toronto

ROBERT C. FRANKLIN,
President of Ontario Hydro, Toronto

LEO W. GERARD,
Director of District 6 (Ontario) of the United Steelworkers of
America, Etobicoke

- ROBERT GORDON,**
President of Humber College, Etobicoke
- GERALDINE KENNEY-WALLACE,**
Professor of Chemistry and Physics, University of Toronto
and Chairman of the Science Council of Canada, Ottawa
- W. NORMAN KISSICK,**
Chairman and Chief Executive Officer of Union Carbide
Canada Limited, Toronto
- HON. MONTE KWINTER,**
Minister of Industry, Trade and Technology
- JUDITH MAXWELL,**
Chairman of the Economic Council of Canada, Ottawa
- PATRICK A. MONAGHAN,**
President of Marshall, Macklin, Monaghan, Toronto
- J. FRASER MUSTARD,**
President of the Canadian Institute for Advanced Research,
Toronto, and Professor in the Pathology Department at
McMaster University, Hamilton
- FIONA NELSON,**
Trustee for the Toronto Board of Education, Toronto
- HON. ROBERT NIXON,**
Treasurer of Ontario and Minister of Economics
- GEORGE A. PEAPPLES,**
President and General Manager of General Motors of Canada
Limited, Oshawa
- HON. GERRY PHILLIPS,**
Minister of Labour
- PAUL J. PHOENIX,**
President and Chief Executive Officer of Dofasco Inc.,
Hamilton
- FRED W. POMEROY,**
National President of the Communications and Electrical
Workers of Canada, Ottawa
- ROBERT G. ROSEHART,**
President of Lakehead University, Thunder Bay
- PERCY SKUY,**
President, Ortho Pharmaceutical (Canada) Ltd., Don Mills
- JOHN THOMPSON,**
President and Chief Executive Officer of IBM Canada Ltd.,
Markham
- DAVID G. VICE,**
Vice-Chairman, Products and Technology of Northern
Telecom Limited, Mississauga
- DONALD C. WEBSTER,**
Chairman of the Board of Helix Investments Ltd., Toronto
- PETER N.T. WIDDRINGTON,**
Chairman of John Labatt Ltd., London
- GORDON WILSON,**
President of the Ontario Federation of Labour, Don Mills
- DOUGLAS WRIGHT,**
President and Vice-Chancellor of the University of Waterloo,
Waterloo

SECRETARY

LEN PITURA,
Deputy Minister of Industry, Trade and Technology

**PREMIER'S
COUNCIL
SECRETARIAT**

HELEN BURSTYN,
Deputy Secretary

ROB McLEOD,
Senior Policy Advisor

GERALD PISARZOWSKI,
Senior Policy Advisor

COLLEEN MURPHY-DEVLIN,
Assistant

**CANADA CONSULTING
GROUP**

NEIL PAGET,
Partner

DAVID PECAUT,
Partner

ANNE DONALDSON-PAGE,
Consultant

LUCILLE FOWLE,
Consultant

SUSAN WRIGHT,
Consultant

JO-ANNE NOVACIC,
Assistant

TABLE OF CONTENTS

INTRODUCTION

Preparing People for the New Global Economy	1	<i>ix</i>
Higher Value-Added Restructuring	2	
The Forces Driving Restructuring	3	
Managing Restructuring and Technological Change	3	
A Framework For Understanding Skills	4	
The Drivers of Skills Change	6	
The New Demographic Realities	8	
Towards an Inclusive People Strategy	11	

SECTION I: EDUCATING FOR THE NEW MILLENNIUM

THE SCHOOLS IN CONTEXT	16
Laying The Foundation For Learning	16
Schools as Agents of Change	16
The Growing Demands on Schools	17
Early Childhood Barriers	18
A PLATFORM FOR LIFELONG LEARNING	20
Language and Learning	20
Bringing Math and Science Into the Mainstream	22
Building the Foundation Skills	27
THE PIVOTAL YEARS	28
Lost Potential: Dealing With the Dropout Problem	30
The Mismatch Between Student Choices and Career Opportunities	33
Focusing the Guidance and Counselling Functions	36
Creating a Common School Experience in the Transition Years	37
Offering Opportunities in the Specialization Years	39
THE LEVERS OF CHANGE	41
Emphasizing Evaluation	41
A New Understanding of Student Achievement	43
Revamping Teacher Training	44
Leadership in School Administration	46
Building Bridges	48

**SECTION II:
ADDRESSING THE
TRAINING DEFICIT**

MEETING THE NEEDS OF THE NEW GLOBAL ECONOMY	52
Beyond The Basics:	
Education at The Post-Secondary Level	52
The Needs of the Traded Sectors	53
Improving Access	54
Emphasizing Generic Skills	55
Quality Assurance	56
REVITALIZING THE TECHNOLOGY	57
The Changing Role of the Colleges	57
Declining Enrolments in Technology Programs	58
Low Completion Rates	61
Quality and Relevance	63
Centres of Specialization	66
ENHANCING UNIVERSITY EDUCATION	68
The Enrolment / Funding Squeeze	69
Rewarding Teaching Excellence	72
Maths, Sciences and Engineering:	
Growing Demand, Decreasing Supply	73
The Demand for Graduate Degrees	77
ENSURING CONTINUITY ACROSS THE SYSTEM	79
RECOGNIZING THE GLOBAL VILLAGE	81
THE TRAINING IMPERATIVE	83
Training For The New Global Economy	84
Training For Equity	86
The Industrial Relations Environment	87
Towards a New Approach to Training	89
TRAINING IN INDUSTRY	91
The Investment In Training	91
The "Free Rider" Problem	94
The Changing Focus of Training	95
The Growing Importance of Generic Skills	99
The Quality Issue	102
Small Business Concerns	102
Training in the Traditional Services	103
Where Training in Industry Falls Short	103
Dissatisfaction With Government Training Programs	105
The Need for Fundamental Change	106
THE GOVERNMENT ROLE	108
The Federal Government Function	110
The Provincial Role in Training	115
THE AILING APPRENTICESHIP SYSTEM	120
An Antiquated System	121
Increasing Access To Apprenticeship	124
THE COMPARATIVE EXPERIENCE	127
The U.K. Levy / Grant Approach	127
Japanese Firms as Learning Organizations	129
The West German "Dual System"	132
Sweden's Active Labour Market Policy	133

SECTION III: ADJUSTING TO CHANGE

FORGING A NEW APPROACH TO TRAINING	137
Emerging Sectoral Models	137
The Ontario Training and Adjustment Board	139
The Sectoral Training Committees	143
The Regional Training Committees	145
Apprenticeship Reform	146
The Learning Network	147
The Delivery Mechanisms	147
Employment Access Services	149
 LABOUR FORCE DISPLACEMENT AND ADJUSTMENT	 151
The Process of Economic and Labour Adjustment	153
Job Churning	154
Layoffs and Closures in Ontario	155
Adjustment and Technological Change	156
Job Loss and Labour Mobility	157
Internal and External Mobility	159
Layoffs and Unemployment	161
Groups at Risk in the Adjustment Process	165
The Social and Health Effects of Job Loss	169
 SOME ADJUSTMENT CASE STUDIES	 171
Internal Redeployment	172
Community-Based External Adjustment	177
Sectoral and Cooperative Models of Labour Adjustment	179
 THE PRESENT LABOUR ADJUSTMENT POLICY FRAMEWORK	 181
The Goals of Adjustment Policy	181
The Federal Government Role	182
The Provincial Government Role	183
Problems with the Existing Labour Adjustment System	184
 LABOUR ADJUSTMENT IN OTHER COUNTRIES	 189
West Germany	190
Sweden	192
Japan	194
The United States	195
Lessons from Abroad	196
 MANAGED CHANGE: A NEW FRAMEWORK FOR LABOUR ADJUSTMENT	 199
Principles for Labour Adjustment	199
Advance Notice and Rapid Response	200
Adjustment Committees	203
Adjustment Services	204
Diversification for Single-Industry Communities	206
Creating New Restructuring Options	207
Towards A New Labour-Management Vision	208
The Basic Adjustment System	210
Income Maintenance	210
Conclusion	213

APPENDICES

APPENDIX A:	
Commentators and Contributors	215
APPENDIX B:	
Premier’s Council Meetings on the Human Resource Agenda	216
APPENDIX C:	
The Premier’s Council Subcommittees	217
APPENDIX D:	
Training and Technological Change in the Automotive Parts Industry	223

INTRODUCTION

When the Premier's Council issued its first report in 1988, Ontario had been enjoying a period of sustained economic prosperity. Now, two years after the release of *Competing in the New Global Economy*, there are signs that this growth is faltering. Auto production has fallen in response to slumping sales, the forest products sector has softened, nickel prices have dropped and some of our high tech giants are retrenching. In the meantime, the industrial restructuring taking place in the wake of the Canada-U.S. Free Trade Agreement and the inexorable movement towards global trading markets have accelerated.

These developments come as no surprise. Indeed, the Council's first report warned that the boom of the mid-1980s concealed structural weaknesses in the provincial economy and the vulnerability of many Ontario industries to international competition. Current circumstances have served to confirm and underline the central message of that report: we cannot cling to low-wage, low value-added activities where we have no competitive advantages, but must move into the high value-added, high-wage goods and services wherein lie our best hopes for prosperity over the long term. This shift will require continuing improvements in the productivity of both capital and labour.

A critical determinant of whether we can make the transition to a higher value-added economy will be the education, skills, ingenuity and adaptability of our workers. They must be prepared for work which will demand the sophisticated knowledge and talents that are the trademarks of a truly developed nation. Our raw materials, our infrastructure and our capital will not be utilized to their fullest without the enhancements that a competent, innovative and adaptable workforce can bring to such advantages.

Recognizing the crucial contribution of our human resources to our ability to compete in the new global economy, the Council's earlier report recommended that its second agenda focus on people — their education, training and adjustment to industrial restructuring. This report, representing the culmination of that effort, presents a set of findings and a plan of action for dealing with these human resource issues. It is intended to complement and expand on the economic outlook offered in *Competing in the New Global Economy*. And like its predecessor, this report is a call for change — significant change.

The report is organized into three main sections that address the education, training and labour adjustment challenges confronting the province. Section I examines the role of the

HIGHER VALUE-ADDED RESTRUCTURING

education system in providing the learning and life skills that young people will need to contribute to and succeed in the new global economy. Section II addresses the issue of training for the workplace by reviewing the structural impediments to more and better skills development for the incumbent workforce. The final section of the report examines the adjustment experience of displaced workers and proposes measures to ease the often painful transitions that accompany industrial restructuring.

This introduction to the report attempts to serve several purposes. First, it provides some background on the Premier's Council, particularly the philosophical underpinnings of the competitiveness issues that carry over from the Council's earlier work. It also offers some practical prefatory information about the economic, technological and demographic forces shaping the people and skills issues in Ontario. Finally, it tries to foreshadow some of the themes and ideological premises that will inform the findings and conclusions drawn later in this report.

In its first report, the Premier's Council identified the competitive challenges facing the province and described the restructuring necessary to prepare Ontario for the new global economy. Most of that restructuring involves shifting resources out of low-wage businesses and the commodity segments of resource and mature manufacturing businesses into higher value-added products and services. The Council concluded that it is only by continually raising our value-added per employee that we can increase our wealth and maintain a high standard of living.

This value-added shift must happen across all parts of our economy. In our resource sectors, we must build upon our natural advantages in raw materials to create defensible competitive positions in higher value-added products, like specialty papers and branded processed foods. In our mature manufacturing sectors, we must exit the low-wage segments and shift both our workforce and capital into higher value-added per employee businesses like precision machining or automated assembly. We must also expand our activity in high growth sectors, like aerospace and telecommunications equipment, where we have established a competitive position upon which we can build. Within these high growth sectors, we must also continue to shift our efforts toward such higher value-added per employee activities as writing software or manufacturing complex components.

The restructuring we require cannot leave out our service sector. In internationally traded services, like engineering or computer systems integration, we must remain focused on those segments where our skills and innovative ability can keep us competitive and continually raise our wealth creation capacity. Much of our service sector — businesses like advertising, legal services, communications, construction and transport — directly supports the traded goods and service sectors of the economy. The quality and efficiency of these businesses can significantly affect the competitiveness of our traded sectors.

Even the segments of our service sector most removed from international competition — health care and social services, for instance — are under pressure to restructure in the face of rapid technological progress and competition for public resources which encourages all public goods to be provided more efficiently. Thus, the process of restructuring to higher value-added activities affects

THE FORCES DRIVING RESTRUCTURING

both producer services and what might be called the tertiary service sector.

The two primary forces driving economic restructuring are the globalization of business and the acceleration of technological change. Globalization affects both markets and production systems. Product differences between countries are declining rapidly and brand names have become truly international in their market appeal. At the same time, many production systems are now organized according to an international division of labour, with low-wage production residing in the less developed world and complex production anchored in high-wage countries.

Colour television is a good example of the globalization of an industry. Twenty-five years ago, there were over a hundred companies in the colour television business worldwide (several of them in Canada), with each firm producing its products within and for a particular local market. Today, less than ten major multinationals dominate the global colour television business. The colour TV production system has also globalized. Large screen colour televisions are produced through low-wage component assembly in the Far East or Mexico, picture tube production in highly automated plants in Japan, North America or Europe and set assembly close to final markets.

Accelerating technological change is the other major force transforming our economic landscape. Technological change has been a constant of the modern era, but the rapidity of that change today makes this a time of radical restructuring which touches virtually every industry in Ontario.

Technological change alters both products and the process of creating them. The typical automobile today, for instance, carries nearly two thousand dollars' worth of hardware and software controlling everything from the fuel mixture to diagnostic systems. The process of manufacturing that automobile involves hundreds of machines which are controlled by micro-processors and some form of computer-aided manufacturing in many cases.

There has been an explosion in the adoption of new machine and computer-based technologies in pursuit of greater productivity and higher quality. These technologies range from computer-aided design and manufacturing to office automation. After a slower start than in some other countries, Ontario's pace of technology adoption is now quite rapid. In just half a decade, the use of computer-based manufacturing and design technologies in the Ontario auto parts industry increased significantly; the use of programmable controllers alone rose from 50 percent of all firms in 1985 to 75 percent by 1989.¹

MANAGING RESTRUCTURING AND TECHNOLOGICAL CHANGE

The pace of technological change today is sometimes perceived as undermining workers' skills and threatening their job security. Indeed, rapid technological change can destroy overnight the value of the accumulated skills of a lifetime. Workers who may have thought their acquired expertise left them secure have often been subjected to a wrenching transition to either a lower paying or an entirely new job requiring a decidedly higher level of skill.

Ontario cannot ignore this restructuring process nor its effects on our labour force. We must respond to and manage this

¹ Canada Consulting and Premier's Council Secretariat survey of human resources in the automotive parts industry, 1989. (See Appendix D.)

restructuring to our advantage. This means making major choices about how that restructuring occurs. We cannot simply stand back and let it happen, for the likely consequences of this passivity will be a lower standard of living, immense social unrest and a legacy of economic "dead-ends" for much of our population. We must actively and purposefully manage the adjustment process so that it supports our industries and workers. To manage it effectively, we will require an education and skills strategy that facilitates adjustment to change and ensures that such change is for the better.

We should not delude ourselves. There is nothing easy nor automatic about choosing this path of skills-based, higher value-added restructuring. Much of our economy is not currently proceeding down that path. Indeed, recent evidence from the Economic Council of Canada and other studies suggests that we are becoming a more unequal society. Earnings have become more polarized over the past two decades and most of the employment expansion of the 1980s has occurred at the two extremes of the skills and compensation spectrum. The number of highly skilled, information-intensive jobs has grown dramatically, but so too have lower skilled, routine jobs, particularly in the traditional services. There is also evidence that our current policies and institutions for developing the skills of our incumbent workforce fall far short of what is required to preserve and expand the high wage economy.

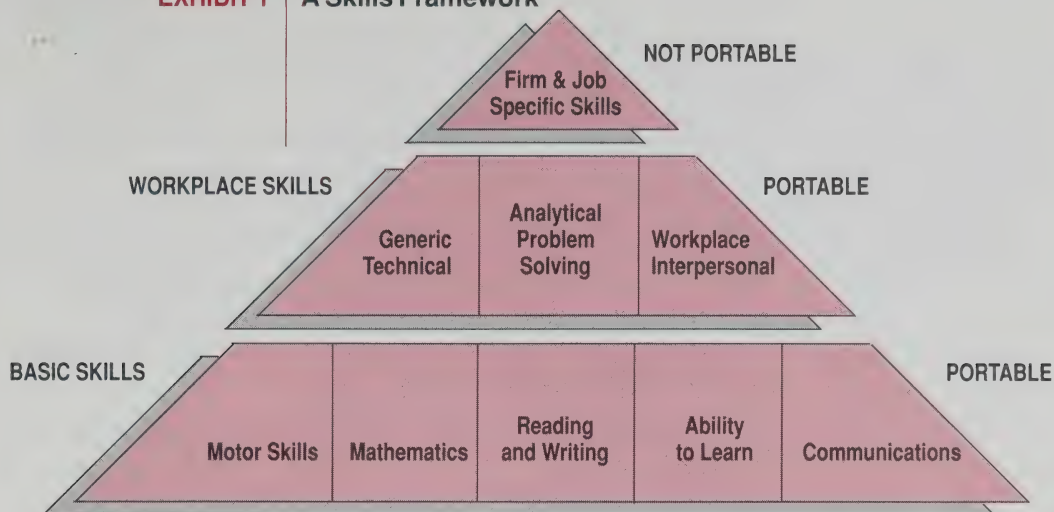
The research undertaken for the Premier's Council has shown that the education and skills of the workforce can affect the direction of restructuring and the types of jobs that result. For example, in retail financial institutions in Germany, where staff are generally well-educated and turnover is low, computerization has been putting more information and decision-making into the hands of bank tellers and other front-line staff who use computer terminals as a resource in answering questions about such things as loans and interest rates. In many Canadian and U.S. financial institutions, on the other hand, front-line staff have not generally been thus empowered through interactive technology and training to perform a counselling role to the customer. North American institutions explain their reluctance to develop more technologically adept personnel by citing concerns about high turnover and the often low expectations they have of new workers' capabilities.

Technological change can result in either more highly skilled or substantially deskilled jobs. By encouraging and investing in the continuous growth in the education and training of its people, Ontario can influence the outcomes of restructuring and technological change to achieve more skilled and rewarding work for those affected by these phenomena.

A FRAMEWORK FOR UNDERSTANDING SKILLS

Debates about the rising or falling levels of skills are often clouded by a lack of clarity about what the term 'skill' really means and what forms of it our new technologies require. The word 'skill' usually conjures up an image of a specific competency, like typing, or perhaps a set of competencies, like tool and die making. The Premier's Council chose to define skill more broadly as all those acquired abilities that enable people to function effectively in their social and economic systems. These include not only the ability to perform tasks, but also the responsibility and judgment to perform them well. Basic skills include achievements like the ability to read or use numbers. Higher order technical skills might include abilities in engineering or science. There is also a range of

EXHIBIT 1 A Skills Framework



Source: Developed by Canada Consulting

occupation-related skills, such as welding or computer programming, and broad business or organizational abilities, such as managing, selling or negotiating.

Exhibit 1 portrays a simple framework to help define the skills and place them in the context of workplaces and work activities. At the first level are five basic skills representing the fundamental building blocks upon which all higher order skills are founded. These basic skills include motor skills, mathematical literacy, reading and writing ability, the capacity to learn and interactive communication skills.

Beyond these basic skills are three types of higher order skills, all of which are portable in the sense that they cut across many tasks, jobs and workplaces. The first type, generic technical skills, are those that involve the application of knowledge specific to a technology or set of technologies. These may be occupation or trade-related, like welding or computerized data entry, or they may be systems or equipment-related, like running a CNC lathe or programming in a particular computer language. Such technical skills involve both the knowledge of a specific technology or system and understanding of its underlying scientific principles.

Analytical and problem solving skills include those abilities which allow people to manage and use information in a variety of ways. Activities such as data gathering, problem identification and resolution and decision-making all rely heavily on analytical skills. Often such skills are closely linked with technical skills, since understanding a technology well often permits the solving of problems related to it.

Workplace interpersonal skills, the third variety of higher order skills, enable people to work effectively in organizations. These include a combination of complex and often sensitive communications skills and team problem solving abilities. These skills are implicit in negotiating, brainstorming, and conflict resolution processes. These are skills that have traditionally been developed in managers, but are increasingly being associated with employees' training in the interests of improving organizations' internal effectiveness and relations with outside groups like suppliers and customers.

THE DRIVERS OF SKILLS CHANGE

All of the above workplace skills should be transferable from one job or workplace to another. But there are also certain technical and other skills which are job or firm-specific and cannot be applied readily elsewhere. The knowledge of how to make a particular component or specific process improvements may not transfer well to other work situations. The acquisition of such job or firm specific skills, by their very nature, should be the responsibility of individual employers to provide. Broad basic skills that are cumulative and reusable throughout one's working life should, for the most part, be the responsibility of the public sector to provide, first in the school setting and later through remedial or other adult education opportunities. Portable workplace skills should be the shared responsibility of employers and the public sector to provide.

Skill requirements are changing and in most cases appear to be rising across the occupational spectrum and across industries. Attempts to quantify or offer more definitive assessments of increased skill needs or levels are always somewhat suspect as the pace of change tends to turn demand projections into moving targets. Nevertheless, it is possible to identify the major forces driving skills changes and the implications of some of these skill trends for Ontario's workforce.

Skills changes can occur in essentially four ways:

- The skills required within specific jobs change (Example: secretaries now operate word processors)
- The skills required for all jobs within a particular workplace change (Example: all employees learn to use statistical process control techniques)
- The mix of jobs within an industry sector changes (Example: declining numbers of welders in automotive plants or an increase in the number of electronic technicians as a result of automation)
- The mix of industries in the economy changes (Example: the demand for workers in service industries increases as employment in traditional manufacturing declines)

The skill changes taking place in each of these circumstances generally call for higher levels of education and different combinations of ability, particularly in those workplaces where productivity improvements and more participative management structures are being introduced. While the technical skills required of a machinist may have declined with the advent of CNC (Computer numerical control), for instance, the analytical and interpersonal skills may have increased to accommodate changes in work environment (See Exhibit 2).

The changing mix of jobs in industries and the shifting positions of industries in the economy are also altering, often increasing, skill requirements. As Exhibit 3 illustrates, restructuring and technological change in the automotive parts industry is rapidly reducing the number of unskilled jobs and markedly increasing the need for skilled workers.

Although the changing skill mix across the entire workforce is difficult to portray, Employment and Immigration Canada tracking data has suggested that the educational attainment levels of the workforce have risen steadily and are expected to increase further by the end of the decade. As Exhibit 4 indicates, the

EXHIBIT 2

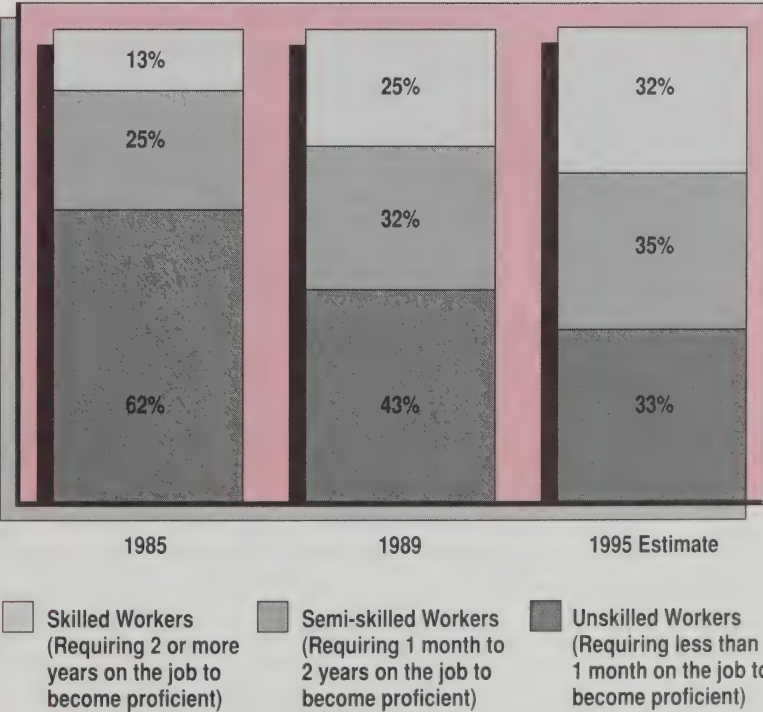
Skills Required of a Typical Machinist in 1975 Versus Today

	TYPICAL MACHINIST CIRCA 1975	TYPICAL MACHINIST TODAY (CNC)
Skills Required in the Job	<ul style="list-style-type: none">• Manual dexterity critical• Some analytical and problem solving skills• Significant machine-specific knowledge	<ul style="list-style-type: none">• Monitoring skills critical• Problem-solving central to task• Statistical process control necessary• Minor maintenance performed
Skills Needed for Relating Outside the Job	<ul style="list-style-type: none">• Communication with supervisor and a few related workers• General work environment, safety and employment skills	<ul style="list-style-type: none">• Problem solving skills in team setting with work unit, maintenance staff, and supervisor• Interaction and involvement in plant-wide quality control• Feedback and CNC programming discussions with engineering

Note: Highly skilled manual machinist jobs remain today in many areas, especially in low production run applications.
Source: Canada Consulting interviews.

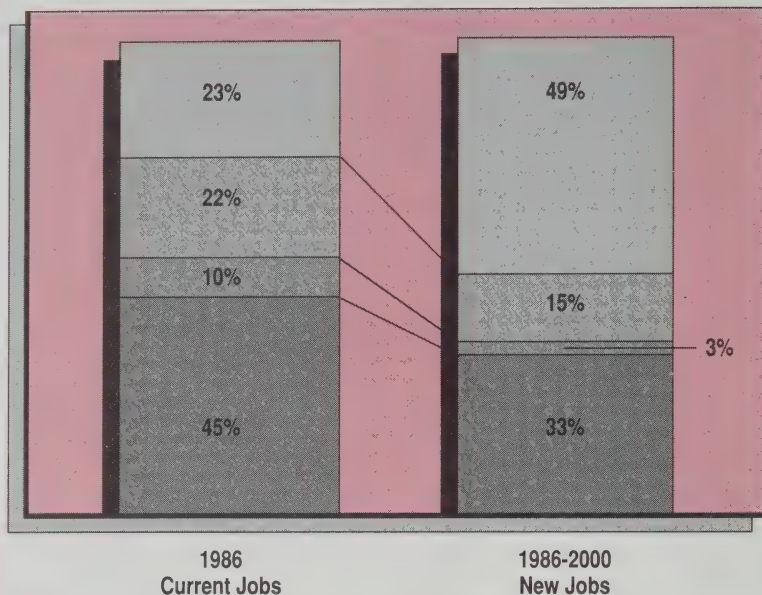
EXHIBIT 3

Skill Mix of the Ontario Automotive Parts Industry Workforce
(Percentage of Hourly Labour Force)

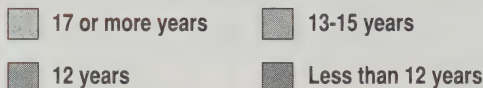


Sources: Canada Consulting and Premier's Council Secretariat survey of human resources in the automotive parts industry, 1989 and Canada Consulting and APMA survey of the Canadian automotive parts industry for the Automotive Human Resources Task Force, 1985. (See Appendix D.)

EXHIBIT 4 The Rising Educational Requirements of New Jobs



SKILL LEVEL/YEARS OF EDUCATION AND TRAINING



Source: Employment and Immigration Canada, 1989.

proportion of new jobs requiring a Grade 12 education or less is 55 percent today, whereas by the year 2000 this educational level will be seen as adequate for only 36 percent of jobs.

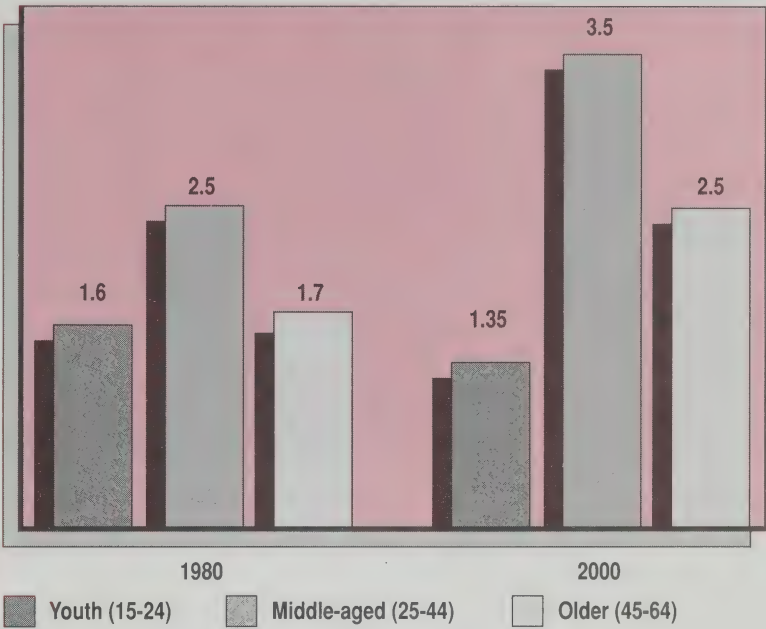
THE NEW DEMOGRAPHIC REALITIES

In the years to come, Ontario will be moving from a labour surplus to a labour shortage situation. The Ontario workforce of the 1990s and beyond will have a very different makeup from what we have seen in previous decades. For one thing, it will be proportionately older. The baby boom generation is now in its prime working years, and the number of young people entering the labour market is declining. Exhibit 5 projects that the number of 15 to 24 year olds entering the workforce will continue to drop, while the number of middle-aged and older workers will increase considerably. The median age of the Ontario population will rise from a low of 27.2 years in 1971 to 40.2 years by the year 2011.

Fewer young people and a larger older population will alter the workforce profile in Ontario. By the year 2000, 82 percent of the Ontario working age population will be between 25 and 64 years old; in 1980 this group comprised 72 percent of the province's working population.

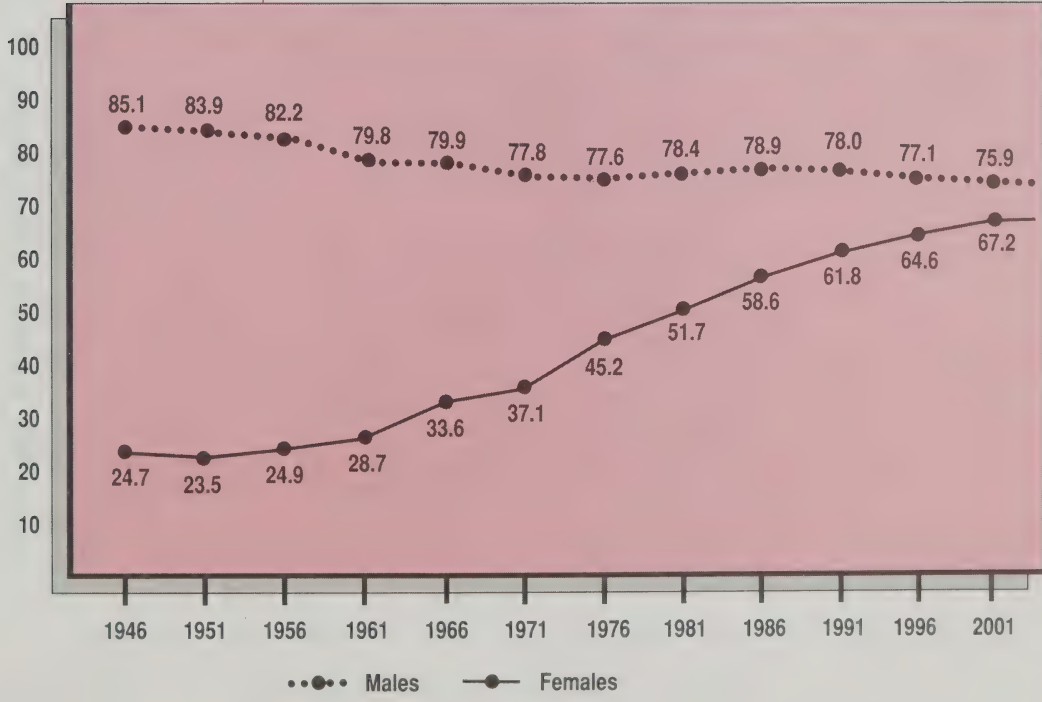
Female participation in the workforce has more than doubled from the mid-1950s to the mid-1980s, while the male participation rate has declined slightly since the late 1960s. Although female workforce participation continues to increase, the rapid growth experienced over the last 30 years is now beginning to level off. The male participation rate is projected to continue to decline slowly to the year 2000 (See Exhibit 6). The tapering off of the growth of

EXHIBIT 5 Expected Age Shifts in Ontario Working Age Population (millions)



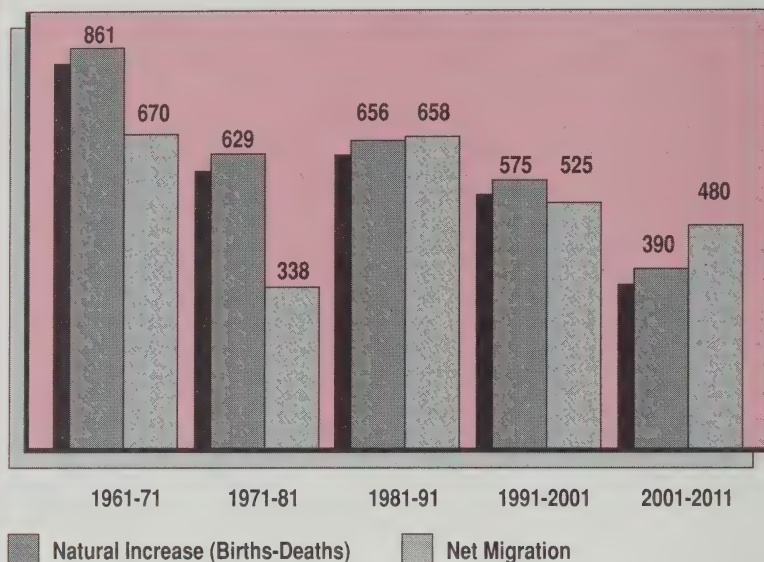
Source: Statistics Canada and Ontario Ministry of Treasury and Economics.

EXHIBIT 6 Labour Force Participation Rates, Ontario (% of Working Age Population in Ontario)



Sources: Statistics Canada and Labour Market Research Group, Ministry of Skills Development, 1989.

Components of Ontario Population Growth 1961 – 2011 (thousands)



Source: Statistics Canada and Ontario Ministry of Treasury and Economics.

female and youth participation in the labour force points to a potential shortage of entry level workers for Ontario's industries.

Women have occupied a disproportionate share of the lower skilled jobs in the labour market as their participation in it has increased. As the jobs of the future will place greater emphasis on higher education skills levels, particular attention will need to be focused on ensuring that women not only keep pace with rising skill requirements, but that the gap in skills and remuneration levels between men and women is closed.

Immigration levels will also have some bearing on the profile of the Ontario labour force. In the past, natural increases in the population exceeded net migration to the province, so that most of our labour force growth came from the expansion of our indigenous population. In recent years, however, the lower birth rate and higher death rate have brought natural population increases down to the level of net migration. Growth from net migration will continue to equal or exceed the natural increase in population (See Exhibit 7).

Only 35 percent of adult immigrants to Ontario have 13 or more years of education, compared to 50 percent of Ontario residents with this level of education. This suggests that basic skills and remedial education requirements for immigrants may be high. Also significant is the fact that 40 percent of Ontario landed immigrants have no ability in either official language; thus, many of them will continue to require training in English as a second language.

All of these trends signal the emergence of a dramatically different workforce as Ontario moves from a labour surplus to labour shortage situation. Policy-makers will thus have to rethink their now-dated emphasis on the problem of youth unemployment

and concentrate instead on addressing the problems facing mid-career and older workers. Industry, educators, labour and government will all need to address the training needs of women, immigrants and other groups in order to ensure the fullest possible participation in our workforce.

In the new global economy, everyone will count; all skills and contributions will be important. Because Ontario will experience growing difficulty in meeting its skill requirements through traditional sources — immigration and the entry of young people into the labour force — we have no choice but to rely on sustained upgrading of the skills of the currently employed.

A people strategy that also aims for inclusiveness and fairness must be founded on several universal entitlements:

- An education that provides the basic skills to participate in the economy;
- Freedom of choice in one's career and full access to that chosen career;
- Equity in opportunities to upgrade skills and qualifications throughout one's career;
- The pursuit of learning as a lifelong endeavour;
- The right to participate in economic decisions.

Translating these principles into practice will be a long and difficult undertaking, but one that must be pursued in the interests of preparing all Ontarians for the 21st century.

What we want to see is the child in pursuit of knowledge and not knowledge in pursuit of the child. GEORGE BERNARD SHAW

EDUCATING FOR THE NEW MILLENNIUM

13

The Premier's Council approached the issue of education in Ontario with considerable care and respect for a system of which we can be justifiably proud. Recognizing the breadth and complexity of education issues, the Council avoided attempting a comprehensive analysis and recommending sweeping reforms. The system has already been and will continue to be well studied and served by many expert and in-depth analyses; it is also already undergoing fundamental restructuring and renewal in response to an ever-changing set of needs.

Education is our major public investment in equipping people to face and shape change. Decisions over the form, content and pace of learning have become broad political issues involving many legitimate stakeholders beyond the teachers and students now in the classroom.

In adding its voice to the many who take a profound interest in the education our schools and post-secondary institutions provide, the Council had several simple goals in mind. The Council wanted, first, to take a 'layman's look' at the major issues facing the education system and understand their significance from the perspective of a diverse group of outside interests. The Council also sought to understand those issues in the context of international competitiveness, the issue which has dominated its deliberations over the past four years, while appreciating the wider social context and institutional setting in which the education system exists. Finally, the Council wanted to suggest some broad directions (not prescribe radical interventions) for change in the education system. This directional approach is intended to be both mindful of and consistent with the current waves of reform benefitting and buffeting the system.

The Council based its treatment of education issues on several guiding principles, stated in general terms as follows:

- **The education system must provide the foundation skills that constitute a platform for lifelong learning.**
- **This platform for lifelong learning must be universally accessible and provided as a basic entitlement.**
- **Individuals must have every opportunity to choose and pursue any educational pathway.**
- **No choice should limit further choice or the pursuit of alternative pathways; in other words, there should be no dead ends.**
- **Education can and should be experienced, acquired and provided outside of formal institutions.**
- **The skills taught in the education system should be generic, rather than job-specific, and should be grounded in a solid, comprehensive general education.**
- **Change within the education system occurs gradually, sometimes imperceptibly; nevertheless, given the centrality of education to Ontario's future, change must occur in timely and manageable increments.**
- **Among the many goals the education system is designed to meet, maintaining and enhancing Ontario's competitiveness in the new global economy should figure prominently.**

The ensuing discussion of the education system divides into two main parts, the first dealing with elementary and secondary education and the second covering education at the post-secondary level. The first part, "Laying the Foundation for Learning", offers a social and economic context for the Council's discussion of the schools and then examines, in turn, the building of a platform for lifelong learning during the school years, the critical decision-making and developmental years at the secondary level, and the key levers of change within the education system. The second part of this section looks at the problems and prospects facing college and university education systems.

A number of recommendations flow from the Council's review of the education system. Some of its recommendations are aimed at the school system itself; others include or are specifically directed at the surrounding influences — community, parents, business and labour — who have a stake as well as a role to play in the assurance of excellence in education.

The recommendations attempt, overall, to ensure that quality, relevance and opportunity underlie every student's educational experience. Several flagship recommendations support the thematic thrusts that are critical to achieving these ends:

- **The need for a solid learning and skills base** is at the heart of the recommendations calling for a common core curriculum, the development of broad generic skills, and the emphasis on foundation courses during post-secondary education as a precondition for effective continuing education.
- **Innovative tools for ensuring equity** and inclusiveness in education underlie the recommendations for destreaming the schools and improving access to post-secondary education.
- **The need to provide strong leadership and direction** for school achievement is addressed in the recommendations for more effective preparation and constant renewal of teachers and school administrators.
- **The need to offer opportunity and access to all avenues of study** is behind the recommendations promoting transferability and continuity across the post-secondary education system.

THE SCHOOLS IN CONTEXT

LAYING THE FOUNDATION FOR LEARNING

Most Ontarians who will enter the paid workforce for the first time in the year 2000 are in school today. In the remaining decade of this millennium, they will pursue their studies in a period of extraordinary worldwide change.

Change is racing ahead in Ontario too. We know that by the year 2000 almost half of our paid workforce will consist of women, and the ethnocultural profile of most of our cities and the province as a whole will continue to diversify. Technological and economic change will be no less dramatic. As flows of information are accelerated and modes of production fundamentally altered, understanding and adapting to these rapid new developments will be critical to our survival as a society no less than as an economy.

For those who are learning, living and working in this emerging social and technological age, new knowledge, skills and levels of cooperation are a certain and escalating requirement. In an era when people change jobs more often and switch careers several times during their lives, the need for work skills and values that meet the challenge of change must be recognized, both in the workplace and throughout society. The way society views work and prepares its members for it must also change.

A central challenge for all educational providers is to reduce the high level of illiteracy among adults as well as young people. Educators must reach out to learners with special needs and equip them with the basic information, confidence and skills they require to shape their lives in the workplace and in the community.

The Council came across various explanations for the illiteracy problem. Sometimes those who are least well served by formal learning were deemed responsible for their situation; other times the blame was laid, equally unfairly, on the teachers. The Council preferred to explain and deal with the illiteracy situation as a structural problem requiring structural change. The Council focused on the need to develop new institutional relationships and policies that would be more inclusive, equitable and relevant in serving learners' needs. Consistent with this constructive approach is the Council's conviction that education is not a cost, but a social and economic investment in the province's future.

SCHOOLS AS AGENTS OF CHANGE

These imperatives inevitably direct attention to the schools as the starting point for change. The consequent demands on the schools, however, may be excessive. While schools are frequently and often justifiably viewed as primary influences in early life, this image is often carried too far. Schools form only one part of a broad network of change agents that also includes the family, the

community, the media and society at large. They are far more than mere conduits from the shelter of the family to the demands of the workplace. They reflect society's goals and values, they respond to changing standards and needs, and they endure our conflicting priorities and demands in the process.

Schools cannot be viewed as assembly-lines turning out young, educated employees. They are not training centres offering programs that can be readily retooled and adjusted whenever job creation targets and specifications change. Schools are complex, social institutions that help shape the knowledge, skills, behaviours and values of future generations.

In any advanced industrial democracy, genuine and far-reaching changes in social institutions require a broad base of support and shared interest to succeed. This is particularly true for the decentralized system of school governance we enjoy in Ontario. The commitment of the multiple stakeholders and players in the education system is necessary to effect change. Change must not only make sense; it must seem possible.

Understanding the broader social context of our schools does not diminish their role in preparing students for the world of work. As well as providing a general education, they also prepare young people for specific destinations. They must therefore consider the kinds of skills and knowledge the new technological era will require. Tomorrow's workforce will not be composed of individuals with highly specialized skills and knowledge, performing variations of routine tasks on assembly lines, in offices, hospital wards or classrooms. It will be a workforce made up of adaptable individuals, able to formulate and solve problems quickly, to anticipate the need for action, to pass critical judgement and to integrate thinking and knowledge with manual dexterity and physical tasks. Ontario's education system must therefore emphasize broad, critical and socially interactive learning to equip students for the full range of experience they will later encounter.

This latter set of skills cannot be left until the later school years to be cultivated. They are the result of a continuum of learning which begins in the earliest years of childhood and continues throughout adulthood. Learning is not something restricted to the fifteen thousand hours or more that young people spend in school, but is a lifelong process. Schools must provide a solid foundation for the unending development of the skills and knowledge needed to meet the demands of a changing society and a changing economy. It is in this sense that the goals of general education and workplace preparation meet and provide a focus for the revitalization of educational programs.

As society changes, so do our schools. Mirroring society's ever-shifting structures and values, our schools have undergone some fundamental changes. Almost daily, schools are confronting and responding to a host of new problems and challenges, ranging from families in crisis to a burgeoning immigrant and refugee population to alcohol and drug abuse. In keeping pace with what is happening outside the system, the schools have had to offer many additional services that go well beyond providing an education. While fulfilling these numerous and growing expectations, the schools are, above all, required and expected to provide a sound educational foundation in a range of subjects.

Given the overloaded mandate of the schools today,

EARLY CHILDHOOD BARRIERS

defining the role of the educational system only in terms of the needs of the economy would be both unreasonable and unrealistic. With so many competing pressures on the school system, no one issue can be singled out as a priority. While framing its discussion of the education system in terms of advancing competitiveness, the Premier's Council is nevertheless conscious of the other important demands on and roles played by the schools.

By the time many children reach school, the die may already have been cast for them. Health and wealth factors will have combined before they reach kindergarten to predetermine whether some children will hit the school yard running, while others will arrive limping.

The 1980 Senate Committee report, *A Child At Risk* warned us some time ago that "poor children are more likely than children in middle or high income families to be at a disadvantage in the areas of health, education, family life and social activities. They are more likely to have been born premature and underweight, to have health problems, to miss and fall behind in school." More recently, the 1988 UNICEF report on the State of the World's Children made an eloquent appeal for improved community health programs from conception onward as a key to the future well-being and development of all children.

Closer to home, a report on existing research on programs for children in economically disadvantaged communities was prepared for the Children's Services Branch of Ontario's Ministry of Community and Social Services in 1988. It showed the importance of prenatal/infant programs, not only to enhance the future ability of these children to adapt to and perform well in school, but also to increase young mothers' own school enrolment and completion rates. The report found that children's participation in high quality preschool programs led to fewer special education placements, lower grade repeat rates and eventually higher employment rates at better levels of pay.

A 1989 report of the Ontario Child Health Study begun in 1983 dramatically portrays the relationship between poverty and health and school performance. Most significant among the report's early findings is the degree to which poverty and family background correlate with school performance for young girls. In particular, girls from social assistance families are over four times more likely to perform poorly in school than girls from other families, and girls from single-parent families are three times more likely to perform poorly in school. Another finding of the report was that the longer children remained in subsidized housing, the more likely they were to perform poorly in school.

The study concluded that government jurisdictional and funding boundaries must be overcome to allow for cooperative and intervention efforts. The study also advised the expansion of quality child-care programs as a preventive measure against poor school performance and emotional and behavioural problems for poor children, first-rate recreation or skill-development programs for children in subsidized housing to raise their quality of life, parenting, social support, and child care programs targeted to single parents with young children, and lastly, programs fostering child-protective social skills.

Some measures have been introduced in Ontario to improve early childhood education. These include the provision of childcare facilities in all new school buildings, mandatory junior

kindergarten classes, all-day senior kindergarten, and the reduction of class sizes in the primary grades. Laudable as these early education initiatives are, they do not address the need to improve the health and development of all our population before school attendance age is reached.

The provision of local community services and support in the pre-school years is critical to achieving improvement during in-school education. It is time for social policy to give full recognition to the strains that contemporary society is putting on modern families and to put in place the infrastructure that can support them. The generation being born into this decade will enter adulthood in the new millennium. What they can offer then will have a lot to do with what we can give them now, before as well as during their years of schooling.

A PLATFORM FOR LIFELONG LEARNING

Most modern societies accept the principle of universal schooling as essential to social and economic well-being. A consensus has also begun to form around the notion that language and mathematics *and* science together constitute the basics upon which critical thought and the higher order skills are built. The goal of education is to develop the broad thinking skills and the knowledge base by which further learning and more sophisticated applications of that learning can be advanced.

So urgent is the need to adapt to social, economic and technological changes that the education system cannot afford to leave anyone out of this mission. Yet there is a gap between the current education system and the vision of an education system for the new era. The surest way to bridge this gap lies in our efforts to develop universal basic skills in literacy and mathematics and science. It also amounts ultimately to making a better match between life skills and learning patterns of school and workplace.

LANGUAGE AND LEARNING

Most of the population can and do master the essentials of language (listening, speaking, reading and writing) before they leave school. But the higher order skills — effective communication and the more complex linkages of language and thought implied in effective critical analysis — are not always fully developed. The integration of these communication skills and linkages into the basic listening, speaking, reading and writing skills is an essential part of the concept we currently hold of literacy. These communication skills and linkages are also becoming increasingly important in workplaces dominated by smart machines and cooperative decision-making.

In this light, the guidelines for the teaching of language skills in Ontario need to be more widely understood and implemented. The three goals of linguistic competence, communicative competence and analytic competence espoused by the Ministry of Education must be central to every student's education. These emphases are based on the recognition that language skills are integral to the development of thinking skills. Unfortunately, the temptation is to break down language into bundles of component parts and subskills in order to teach and test students on them. Yet effective communication derives from a much more complex interaction of thought and language than these teaching and testing methods are likely to develop. Furthermore, the processes of perceiving, interpreting, deciding and communicating all function through language. But language exercises are pointless if pursued as abstractions rather than tied to

purposeful activities. The workplace of tomorrow will increasingly place value on critical judgment and quick assimilation of information. Good performance on spelling and pronunciation exercises in isolation from practical applications will therefore be of limited value.

Language Across the Curriculum

In 1975 the Bullock Report in Britain officially endorsed the policy now called Language Across the Curriculum. Every subject teacher was expected to be aware of (i) the linguistic processes by which students in their subject areas acquire information and understanding, and the implications for the teacher's own use of language, and (ii) the reading demands of their own subjects, and ways in which the pupils can be helped to meet them. Moreover, each school was expected to develop its own language policy in this spirit.

Three years later, the Ministry of Education in Ontario recommended the same approach in a Curriculum Resource guide for the Intermediate Division (*Language Across the Curriculum*, 1978). This document describes in detail the language skills in question, steps for developing and implementing a School Language Policy, evaluation strategies, and the critical role of the principal in promoting awareness and providing leadership. In Science, for example, language-intensive activities include identifying problems, developing hypotheses, organizing data, explaining findings and proposing theories. In Mathematics, techniques are proposed to help students acquire specialized vocabulary, understand symbols and graphs, and solve problems. In Technological Studies, special emphasis is placed on the writing of technical reports and instructions, as well as the use of assembly instructions, maintenance manuals, parts lists and charts.

A section of Language Across the Curriculum is now added to new Ontario curriculum guidelines in all subject areas at all levels. This reinforces the importance the province of Ontario assigns to the effective use of language throughout its school system. But it is important that the emphasis on good language teaching go beyond the review of grading practices and resource requirements. School language policies, once developed, should not be left to gather dust on the principal's shelf. They should serve as a basis for regular discussion and continual amendment in the quest to improve all students' mastery of language skills in all their learning.

Using Language: Beyond Competence

The literacy debates of today, as well as focusing on the centrality of language to thinking and learning, are also sensitive to the way language works in social contexts. Language use varies as social factors (such as age, gender, cultural identity, social class) vary and as social institutions (private, public, informal, formal) vary. Language variation not only enriches the process of communication, it also reflects the complexities of our society. The teaching of language in schools should strive to add to the linguistic and cultural range of our students and to enrich their skills.

A return to the rigorous study of language in school is much needed. In our haste to sweep away the teaching of abstract rules of grammar in past decades, we have largely removed the critical study of language and its uses from the school curriculum. In a

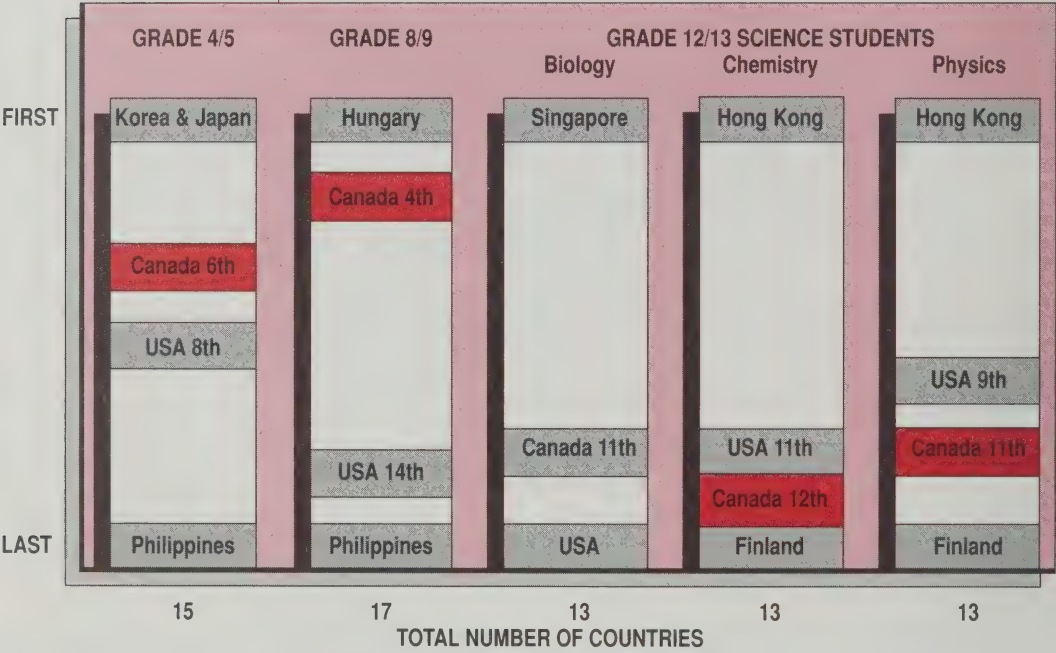
BRINGING MATH
AND SCIENCE
INTO THE
MAINSTREAM

society conscious of its own complexities and seeking to celebrate its differences, the reintroduction of language studies into the curriculum is vital. School policies tying language skills to the development of thought, to learning frameworks and to social context are essential in a society that seeks innovation, excellence and the full cooperation of all its members. Although such goals are not absent from educational policy, they are not always evident in our school experience. Perhaps the real literacy challenge for the future will not be to discover the key to good language teaching, but to put what we already know into practice.

There is no denying the importance of mathematics and science in the intellectual armoury of students entering the technological era. School systems must be sensitive to this new technological reality and prepare their students for it. Accordingly, math and science, as well as literacy, must become priority areas in a common curriculum covering all schools and affecting all students until school leaving age is reached. Students who expect to enter a career

EXHIBIT: I.1

Achievement Ranking of Countries at Each Level, Second International Science Study



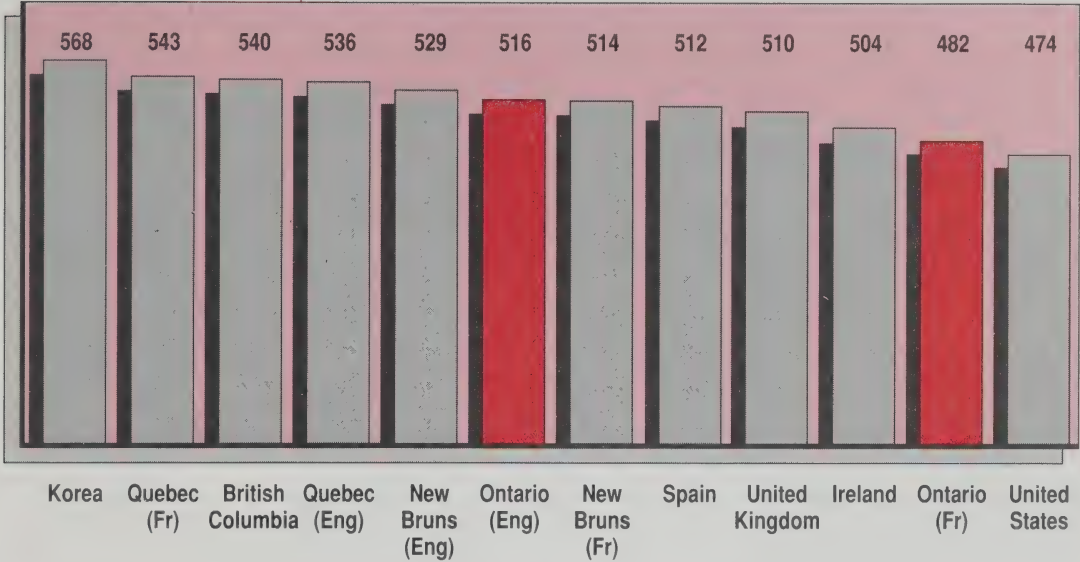
Source: International Association for the Evaluation of Educational Achievement, *Science Achievement in Seventeen Countries*, 1988.

in the advanced technology fields should enrol in additional courses which build upon this common knowledge base.

Measuring Up: Indicators of Student Performance

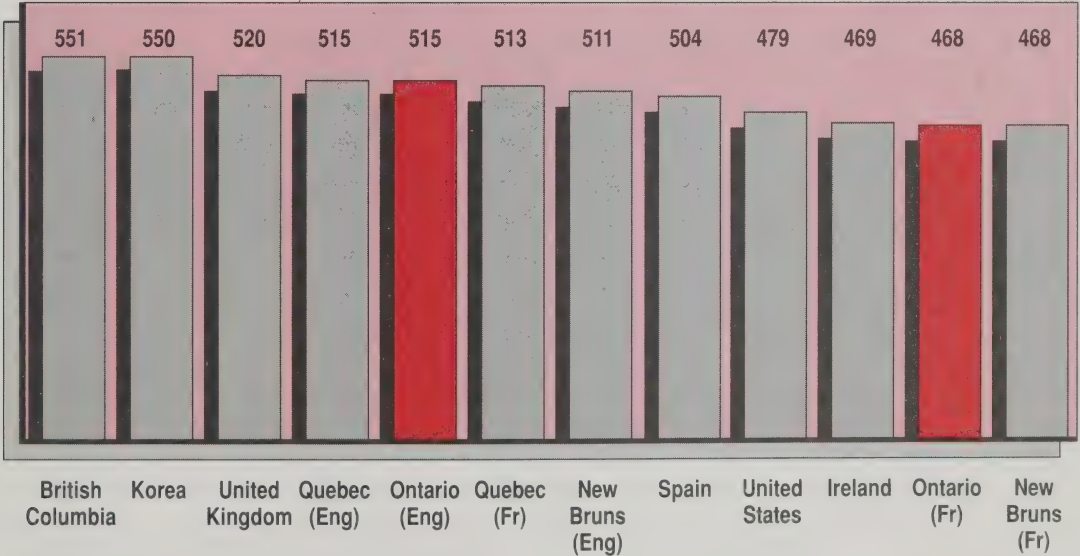
Successive reviews of student performance in mathematics and science have placed Ontario in varying positions relative to its national and international competitors. As noted in the first report of the Premier's Council, Ontario students' performance on the Second International Mathematics Study (1984) was at the

EXHIBIT I.2 **Average Mathematics Proficiency Score, 1988**



Source: Educational Testing Service. *A World of Differences: An International Assessment of Mathematics and Science*, 1989.

EXHIBIT I.3 **Average Science Proficiency Score, 1988**



Source: Educational Testing Service. *A World of Differences: An International Assessment of Mathematics and Science*, 1989.

international average, yet far below the ranking of its major competitor nations. In the Second International Science Study (1988), however, Canadian students at the Grade 4/5 and Grade 8/9 levels ranked in the top third. Unfortunately, this impressive performance was not sustained through the Grade 12/13 level, as Ontario students' ranking dropped to the lowest levels of the 13 countries participating (See Exhibit I.1).

In a more recent and highly disputed international

assessment of both mathematics and science,¹ the performance of Ontario students ranged from average to poor. Ontario students ranked near or below the middle or lower segments on the science portion of the evaluation. Recent provincial reviews of student performance in these subjects confirmed that Ontario students continue to have difficulty with math and science (See Exhibit I.2 and I.3).

It should be acknowledged that there is considerable disagreement in academic circles about whether international comparisons of achievement are reliable indicators of how our students measure up. A frequent criticism of these tests is that the samplings are not always closely matched; indeed, "senior students" may not be defined identically in all countries under consideration, which may result in one country being represented by an elite few students whose high scores skew the test results in that country's favour. It also must be noted that an inclusive educational system such as our own may produce lower average scores than the more exclusive systems in some other nations.

However flawed these international comparisons of student achievement are claimed to be, they do shed some light on performance, particularly at different grade levels. For one thing, they point to the trend in our students' performance to flag at the higher grade levels as Exhibit I.3 indicates. Furthermore, the very existence of comparative tests in these subject areas signals the importance assigned to math and science education in advanced industrial economies.

Making Math and Science More Accessible

When the concept of "language across the curriculum" was first introduced in Britain in 1975,² it was in response to a growing concern about the number of students who were leaving school semi-literate. There is now in Ontario a growing sense of unease with the levels of what might be termed scientific or technological literacy students acquire in school. Critical awareness of the values and limitations of quantitative analysis, experimental method, and the technological application of scientific principles is just as important as the critical awareness of language and its uses. We have come to expect a higher level of performance in math and science — the other critical skills — not only in those destined for the commanding heights of a career in technology, but for all students who will one day enter the workforce. We cannot afford to separate people into the competent few and the mystified many.

The goals and methods of "language across the curriculum" may serve equally well in bringing math and science into the mainstream. Math and science concepts and teaching practices should be extended across and interwoven with other parts of the curriculum. The thinking skills related to math and science, just like those relating to the use of language, should not be bound to distinct disciplines, but dealt with in all subject areas. Small group activities that are interdisciplinary and aim to solve real problems would broaden the understanding and appeal of the maths and sciences.

We need to find new ways to combine kinds of knowledge

¹ Educational Testing Service *A World of Differences: An International Assessment of Mathematics and Science*, 1989.

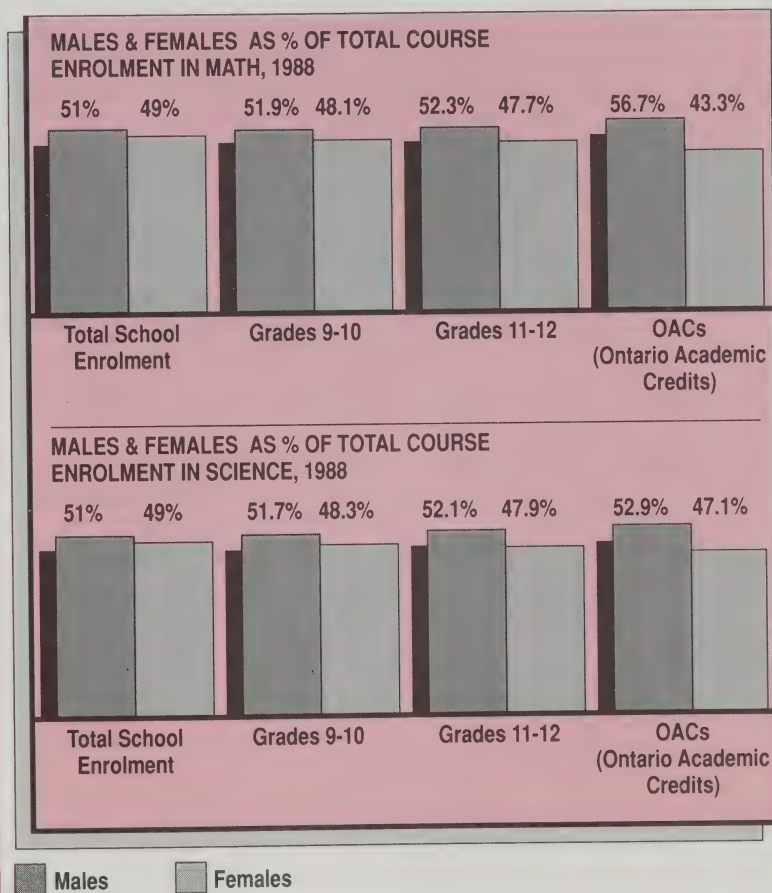
² *Language for Life*, Report of the Committee of Inquiry appointed by the Secretary of State for Education and Science (The Bullock Report), London: HMSO, 1975.

and skills previously separated into different fields of study. If we are moving to a world in which multiple skills are valued more highly than specialization, acquiring this versatility will increasingly depend on how the integration of discrete skills is combined and applied through complex projects at the school level. The aim of such projects should not be limited to the production of papers for grading or something of interest primarily for the intra-mural school community. Such projects should have broader aims and more public outcomes.

The Educational Activity Projects that have generated much interest in France provide an interesting example of how school

EXHIBIT:1.4

Enrolment Trends in Math and Science



Source: Ministry of Education, *School September Report*, 1988.

activity projects can bring an extra-mural orientation to complex learning. The French educational projects have covered such diverse activities as the preparation and publication of local histories gathered orally, research into the viability of traditional crafts in the local economy, environmental cleanups, the building of new sports facilities, and school yard renovations. Both the preparation and the products of such projects can be shared with the broader community of which the school is a part. Such projects, if properly focused and coordinated within the community, could raise consciousness of the importance of mathematics, science and technology, without separating these disciplines from other

educational skills and knowledge.

In recent years, overall participation rates in mathematics and science courses do not seem to have changed significantly. There are, however, major imbalances in male-female participation in math and science. At all levels, young women are less likely than young men to enrol in math and science (See Exhibit I.4).

Striking a better balance in male-female participation in these core disciplines is critical. Inclusiveness in developing our youth's foundation skills is both a social and economic necessity. Since women will represent half of our future paid workforce, we can ill afford to ignore this valuable pool of talent. Particular attention must therefore be paid to encouraging more female participation in maths and sciences, as well as in other studies where women are traditionally under-represented.

Many school-level initiatives are designed to achieve this end. Some schools develop learning projects that bring to the fore women's contributions to the world of science and technology; others use special events such as science fairs to encourage female students specifically to submit projects; one secondary school in the Toronto area, Marc Garneau Collegiate, adopted its new name and image to emphasize its science and technology focus. At the regional level, many Ontario Boards of Education sponsor "Expanding Your Horizons" conferences for young women students in an effort to introduce them to non-traditional subject areas associated with maths and sciences. More could also be done at the provincial level; for instance, special scholarship programs could provide incentives for women to continue or re-enter science studies.

Demystifying Technology

The study of technology as a subject area in itself cannot, strictly speaking, be considered a foundation for learning in the sense that language and math and science have just been discussed. Nevertheless, it is important to develop in students an early comfort level with the concepts and applications of technology.

By the time most students reach the age of choice (in courses and careers) at the secondary school level, their interests do not often reside in the technology-related areas. The lack of interest in and awareness of technology that shows up in later years is attributable in part to the failure to cultivate interest and awareness in the early years of schooling. Efforts to familiarize students with technology as an aspect of daily life would be much enhanced if policies to encourage "technology across the curriculum" were implemented and actually influenced teaching practices and course content. The concept of "technology across the curriculum" can easily be introduced in science, where projects with practical outcomes can be designed to demonstrate the many facets and uses of technology, in combination with math, history and language studies. Language studies provide particular opportunities for demystifying technology by encouraging better use and understanding of technical terminology and bringing effective communications and writing skills to bear on technical issues.

The skills upon which lifelong learning must be based are too important to remain an option throughout the high school years. All students should be required to have a good grounding in language studies, mathematics and science, beginning in their school experience and continuing into the high school years.

Although it would be desirable for all students to continue math and science until grade 12, the Premier's Council recognizes that imposing such a requirement might well be counterproductive, encouraging more students to drop out perhaps rather than endure further math and science education. The compulsory extension of these subjects into the later years of high school might prove equally unnerving for teachers, who would have to force-feed these subjects to many unwilling students.

The Council believes that the ideological and practical mission of the school must be to provide all students with a platform for lifelong learning. This platform must be constructed on a firm foundation of language, mathematical and science skills acquired during formal education and supported by the specific emphases recommended below.

RECOMMENDATION 1: A Platform for Lifelong Learning

- *The teaching of language should aim for more than the achievement of linguistic competence; it should attempt to improve communication and critical thought.*
- *Mathematics and science should become a mandatory component of the core school curriculum until at least the end of Grade 10. (If science and mathematics could ever be made more palatable and attractive for students, the Council would ideally like to see these subjects made mandatory until the end of Grade 12.)*
- *Efforts to promote an understanding of mathematics, science and technology should be extended across the curriculum and throughout secondary level education.*

THE PIVOTAL YEARS

There will always be those who have a greater will to succeed in school than others and those whose talents will better fit the mould of school expectations. In an egalitarian age and society such as our own, we have come to expect that the range of student performance and achievement will vary according to the individual, and that every student should encounter the same possibilities of success and failure. But in every advanced industrial society, however egalitarian, we know that social differences do occur. Rates of achievement or patterns of school behaviour associated with success, when broken down by gender, race, ethnic background or socio-economic status, reveal some very disturbing inequalities.

One recent survey of secondary students in the Toronto Board of Education³ revealed a strong relationship between program placement (basic, general or advanced) and such characteristics as family status and socio-economic status. Students from two-parent families are more likely to be enrolled in advanced level programs than those from a single-parent household. Similarly, students whose parents' occupations are associated with high socio-economic status (professional/upper managerial) are more likely to be enrolled in advanced level programs. Clearly, some students are born to better chances for success or advancement than are others (See Exhibits I.5 and I.6). These social inequalities offer clear testimony that many of our young people's opportunities to learn and participate are being lost. Our intellectual resources are far too valuable to be squandered.

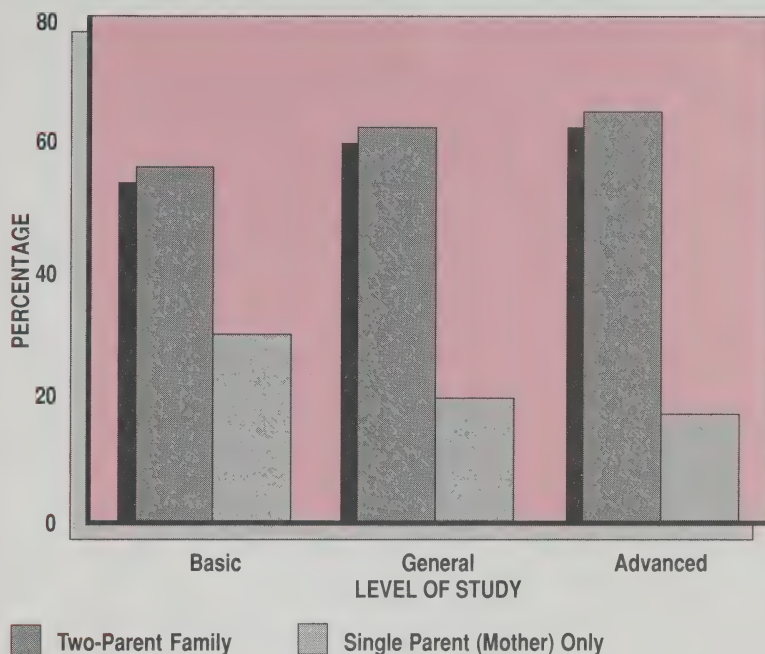
Indicators of the school participation rates, achievement levels and attitudes of Ontario's youth suggest that they are falling short of the high expectations that our society has of them. Some of these shortcomings are showing up in the workplace.

There are two key areas of concern. One is that approximately one-third of Ontario's youth fail to complete high school, not only limiting their own educational opportunities, but excluding them from many employment opportunities which today set Grade 12 as the minimum entry requirement. The other is that many young people apparently lack an awareness of the importance of lifelong learning in the workplace of the future, as well as any interest in or understanding of the full spectrum of career opportunities available to them.

³ Toronto Board of Education, *The Every Secondary School Survey*, Fall, 1987 (published in June, 1989).

EXHIBIT I.5

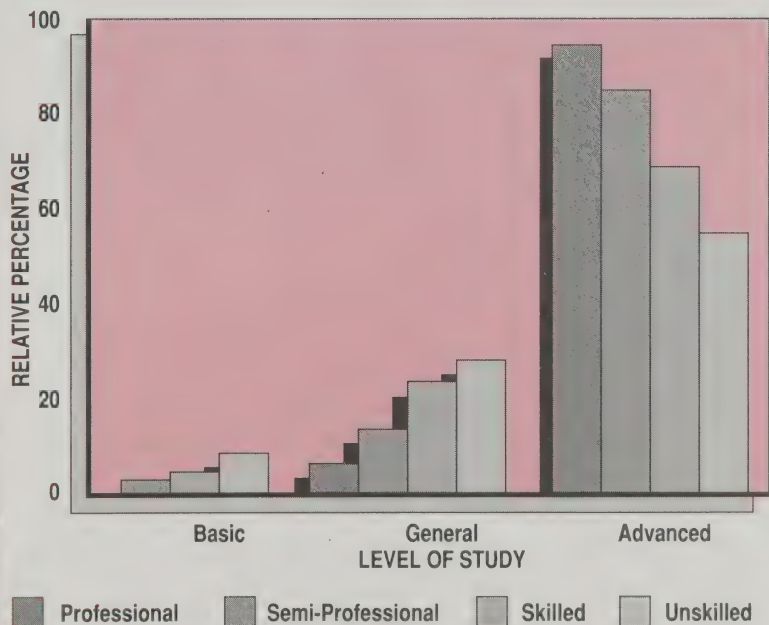
Program Placement by Parental Presence (Both Parents at Home vs. Single Parent)



Source: Toronto Board of Education: *The Every Secondary Student Survey*, Fall, 1987 (published in June, 1989).

EXHIBIT I.6

Program Placement by Socio-Economic Status

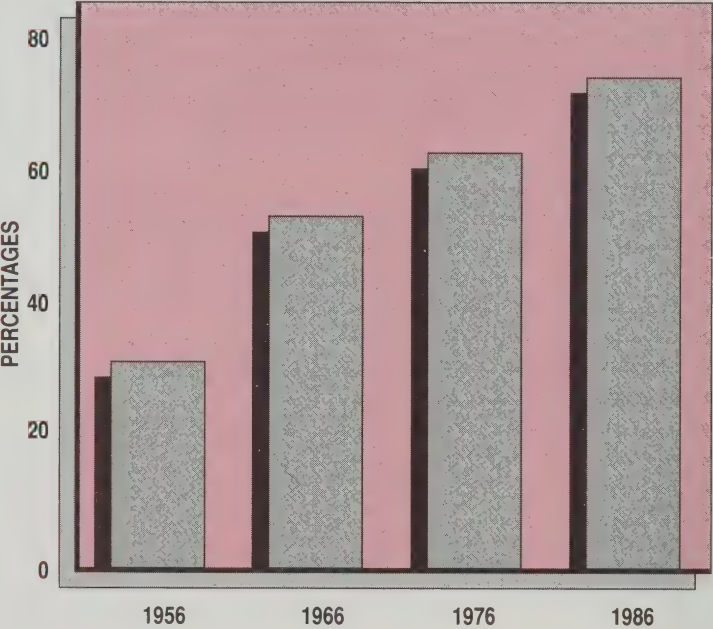


Source: Toronto Board of Education, *The Every Secondary Student Survey*, Fall, 1987.

EXHIBIT I.7

In recent years, the concern over lost potential has centred on school dropouts, the one in three students in Ontario who leave secondary school before graduating. If Ontario is to improve its economic competitiveness, there must be a substantial increase in the proportion of young people who graduate from secondary school and a consequent increase in the quality of their preparation to participate fully and effectively in the labour market. Discussion of the importance of school completion has not been limited to Ontario, though. Ever since secondary school participation rates have reached their current high levels in western industrial democracies, nations have been linking their population's educational profile to their economy's competitive prospects.

**Ontario Graduation Rate Over the Years
(graduates as a percentage of population)**



Source: Ontario Ministry of Education, 1990.

It should be acknowledged that over the last thirty years, significant progress has been made in the proportion of Ontario youth proceeding to high school graduation. In 1956 only 30 percent of the 18 year olds in the province graduated — by 1986, 74 percent of 18 year olds were high school graduates (See Exhibit I.7). A further signal for optimism is the growth in the number of students coming back to day school to upgrade their education. Between 1977-78 and 1987-88 the number of school re-entrants more than tripled — from 15,000 to about 50,000.

Despite this progress in school retention and re-entry rates, serious questions about why students drop out remain. First, why do students leave school prior to graduation when they acknowledge the value of education and generally recognize the importance of education to career opportunities? And what are the means or strategies best suited to reducing the dropout rate?

These questions and the ways of addressing them must be understood in terms of the general philosophy underlying and influencing the structure of the public education system. This philosophy might be characterized as student-centred, and at the secondary school level it is reflected in programming that is designed around individual student timetables and non-career related objectives. In part to avoid the appearance of discrimination against cultural or socio-economic groups, schools are discouraged from labelling the students in terms of the level of difficulty of courses they take. This approach minimizes overt discrimination, but contributes to difficulties in establishing programs with specific career implications. Indirectly, this philosophy of education can lead to a lower graduation rate than is desirable.

There are several outcomes of this educational philosophy that carry implications for the dropout problem. One of these outcomes is a mismatch between level of difficulty of courses selected and educational aspirations. For example, over 60 percent of Grade 9 students take their courses at the advanced level of difficulty, which is viewed as university preparation, but less than half of those students will ultimately attend university. Another unfortunate outcome of this educational philosophy is found in efforts to create packages of courses designed to accommodate particular career destinations; these have generally not been successful. Furthermore, special schools such as vocational schools for low-ability students may be more successful than composite schools in graduating students who take their courses at the basic level, but they are criticized because they enroll disproportionate numbers of students from certain minority groups. Finally, record-keeping that does not identify groups of students experiencing difficulty with school disguises fundamental problems with student progress. For instance, nearly two-thirds of students who take their courses at the basic level of difficulty drop out, as do over half of students who take their courses at the general level. Better information on students at risk of dropping out would be invaluable in identifying program and course weaknesses.

Who, then, does drop out before completing secondary school in Ontario? Certainly students from particular ethnic groups, lower income homes and single-parent families are over-represented among dropouts. But the most powerful predictor of early school leaving is low academic achievement.

School achievement can be measured by the level of difficulty of courses taken as well as marks. The majority of early school leavers were taking their courses at the general level of difficulty at the time of leaving. They represent just over 30 percent of the school enrolment and over 70 percent of the dropouts. Students who take their courses at the basic level represent over 18 percent of the dropouts and less than 7 percent of the school enrolment.

Significantly, most students who leave before graduation are substantially behind their in-school peers in terms of the number of credits they have accumulated. In fact, for most of the dropouts, there is simply no point in remaining in school; they are too far behind to make up enough credits to graduate. This is why dropout retrieval programs for high-risk youth are relatively unsuccessful. In spite of the support that such programs provide, students must still complete lost credits in essentially the same

blocks of time and with the same teachers — both daunting prospects.

Those who do drop out are not necessarily heading for more promising opportunities outside the school system. One need only examine what happens to school leavers immediately after leaving school to illustrate this point. In a recent Ontario study, it was found that one-third of dropouts had no job to go to, another third continued to work at the jobs they had part-time when in school, and another third found other full-time work, many in low-paid jobs in the service sector and with little opportunity for career mobility.

Differences from school to school in retention of students provide some guidance as to how dropout rates can be decreased. Obviously, the greater the number of students who take their courses at the advanced level, the greater the proportion of students who will graduate, but this is not something that can be readily changed. Real differences from school to school in graduation rates are directly linked to evaluation policy. That is, the less failure experienced by students, the less likely they are to drop out. A student's perception of success is a key motivator. This finding is as true in Ontario schools as it is elsewhere in Canada and the United States, where studies have shown that success in school increases staying power.

In order to improve graduation rates, students must therefore experience more success, particularly in critical subjects such as mathematics and science. This would require schools to implement explicit evaluation policies that recognize the implications of high failure rates, provide remedial support for students in basic skill areas, monitor students' progress carefully and provide additional tutoring to ensure that help is available as needed.

Dropout rates can also be linked to streaming, which tends to institutionalize social inequities. In study after study, most recently the Radwanski report, the detrimental effects of streaming on the academic achievement and self-image of students have been documented. Recently, the Ministry of Education has destreamed Grade nine, an initiative the council endorses and will recommend extending later in this report.

Clearer relationships must also be established between courses offered and particular careers in order to sustain student motivation. Students must be able to see definite goals and identify the educational pathways leading to them. Only one in ten students who begin Grade 9 taking mainly general level courses enrolls in a post-secondary program in a community college; therefore, the students in this broad category cannot be encouraged to remain in school by holding out the possibility of a college or university destination as an incentive. Opportunities for strengthening the connection between career opportunities and secondary school programs must be enhanced as will be emphasized in the discussion of secondary school guidance services.

Student Responses to “How Likely Are You to Work in the Following Areas?”

RANK (OUT OF 15 PROFESSIONS)	
1.	Sports and Recreation
2.	Sales and Services
3.	Teaching
4.	Management and Administration
5.	Social Sciences and Community Services
6.	Law/Legal Profession
7.	Arts and Literature
8.	Medicine and Health Care
9.	Government Services
10.	Skilled Trades
11.	Sciences and Engineering
12.	Transportation Industry
13.	Production Assembly and Manufacturing
14.	Fishing, Forestry and Mining
15.	Agriculture and Farming

Source: John Walsh, *The Kitchener, Waterloo and Guelph Training Advisory Council Report on Skilled Trades and Career Selection*, April, 1989 (Survey of 2,545 high school students in 4 school boards).

THE MISMATCH BETWEEN STUDENT CHOICES AND CAREER OPPORTUNITIES

In the workplaces that today's students will one day enter, attitudes towards work and learning are starting to take on greater importance. Critical skill shortages will endure unless young people are attracted to the occupations where they are most needed, and people will not embark on lifelong learning protects unless they can see some point to it and feel they have the foundations skills upon which to build.

Some young people in school today are not aware of the need for further education and training throughout their lives. A survey of the labour market experiences of high school leavers revealed that 40 percent of students going directly into the workforce from high school did not consider further education and training critical to their future; 29 percent had not given further studies or training much thought; 11 percent had decided that they did not need additional education and training; and 16 percent believed that special skills or job training were not prerequisites for landing well-paying jobs.⁴

Equally disturbing from the Premier's Council's perspective is the lack of student interest in careers in the traded sectors. A recent survey of over 2,500 high school students clearly demonstrated that skilled trades, sciences, engineering, and production assembly and manufacturing were low on the list of students' intended career choices (See Exhibit I.8).

Students' indifference to technical and technology-oriented careers is not surprising, given our society's general lack of esteem

⁴ Decima Research for the Ontario Ministry of Skills Development, *Pathways: A Study of the Labour Market Experience and Transition Patterns of High School Leavers*, December, 1988.

The Knowledge of Today for The Choices of Tomorrow

TELEVISION PRODUCTION • THEATRE PRODUCTION
PUBLIC RELATIONS • VETERINARY SCIENCE
PHYSIOTHERAPY • VISUAL DISPLAY
ARCHITECTURE • SOCIAL WORK • JOURNALISM
NURSING MEDICINE • LAW • CURATOR • TEACHING
DIETETICS • ADVERTISING • DENTISTRY • ACCOUNTING
MARKETING • PSYCHOLOGY • HOSPITALITY
PHOTOGRAPHY • GRAPHIC DESIGN • FASHION DESIGN
EARLY CHILDHOOD • TRAVEL AND TOURISM
RADIO BROADCASTING • DENTAL HYGIENE

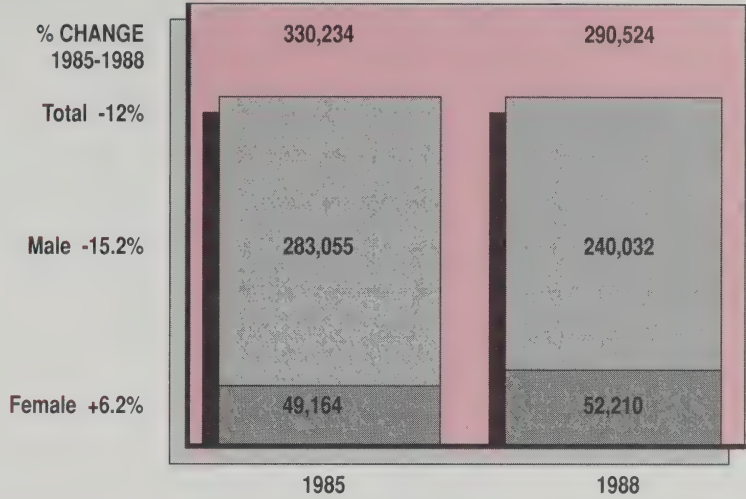
for them. The societal elements that shape young minds — the media, schools, parents and peers — have reinforced the message time and again that professional careers in the service sector, not skilled trades in manufacturing, are where the prestige and payoff can be found. And those who cannot or choose not to aspire to one of these elite professions receive next to no encouragement for considering alternative careers where remuneration (if not prestige) may be equally high.

Students' window on the world of work is narrow. Of the roughly two-thirds of high school students who work part-time, the vast majority have jobs in the lower skilled segments of the service sector. Furthermore, while many students now have the opportunity to experience work through cooperative education programs, their placements tend to be in service or institutional environments which offer no exposure to the skilled trades practised in manufacturing environment.

Guidance counsellors and most other teachers have few opportunities to familiarize themselves with careers outside the service sector, and this is no doubt reflected in the kind of advice they pass on to students. Witness the advertisement for career opportunities that one high school uses in promoting its cooperative education program (See Exhibit I.9).

The technological studies courses offered in high schools have also contributed to the low regard for and flagging enrolment in programs that would lead to a career in the skilled

Enrolment Trends in Technological Studies, 1985-88



Note: Over this period, total school enrolment increased by 6.6 percent. The decline in technological studies enrolment is therefore steeper than this exhibit suggests.
Source: Ontario Ministry of Education, *School September Report*, 1988.

trades or manufacturing. Students tend to regard such programs as the poorer cousin of the prestigious programs leading to university education and professional careers. From 1985 to 1988, enrolment in technological studies courses dropped considerably in Ontario high schools. Differences in male-female participation rates in technological studies are striking although there has been some recent improvement in the number of female student taking technological studies courses. Nevertheless, in all but two technological subjects (personal services and textiles) male students outnumber females, sometimes by a factor of twenty or more (See Exhibit I.10).

Contributing to the enrolment problems in technological studies are an obsolete curriculum and antiquated equipment. In its 1989 Throne Speech, the Government of Ontario recognized the urgent need to update and consolidate curricula and renew technical equipment, acknowledgments that should have been acted upon quickly. Ontario should also follow through on the immediate implementation of its new curriculum guidelines for technological studies, which were designed to replace the 20 year old guidelines which are still being followed in many schools despite their certain obsolescence.

RECOMMENDATION 2:
Making Technological Education and Careers Attractive and Viable Options for Students

The importance, excitement and remunerative rewards of technical, trades and scientific occupations should be promoted extensively both within and outside the school system. Industry should become as actively involved in promoting the courses and career opportunities in these areas as the school system itself.

More advanced level credits in technological studies should be created to enhance their status and substantiate claims of their worth.

Implementation of policies, guidelines and practices announced by the Ministry of Education in the interests of modernizing technological studies should be hastened.

The guidance counsellor's job really consists of three distinct kinds of counselling: career advice and education; a counselling and referral service on social and personal matters; and academic advice that helps students choose educational courses and programs in view of their academic progress and aspirations.

Today's guidance counsellors are expected to fulfill these multiple roles, yet they have rarely been given the necessary training and are simply unable to do justice to the complex demands placed upon them. In order to perform the guidance or vocational counselling role, they require considerable advice and assistance from workplaces and local communities to determine where current career opportunities lie, as well as what the requirements for achieving them are. The provision of effective social, personal and psychological counselling requires a measure of professional training, which many guidance counsellors have not received. Where academic counselling is concerned, much of this can be performed by classroom teachers, who are in the best position to make judgements and offer advice about a student's academic program.

In other words, the pool of people who provided guidance counselling need not, and indeed should not, be limited to guidance counsellors. Guidance can be offered by many individuals, including parents, teachers and peers. Vocational and academic counselling in particular must involve all members of the school community and reach well beyond the schools themselves.

It is easy to assume that if students received adequate career information they would remain in school and pursue the careers in the trades, technology and engineering so necessary for the growth of Ontario's economy. A brief review of the roles and responsibilities of today's guidance counsellors illustrates why the provision of accurate career information is not a simple task.

Since each secondary school student selects his or her own personalized timetable and the composition of each class is determined by computer programming, students do not remain together from class to class, and there is no natural grouping together of students with common career goals. The rationalization of each student's selection of eight courses per year requires time, thought and the ready availability of relevant information. It is extremely difficult for this to be accomplished when the ratio of students to guidance counsellors in Ontario secondary schools is over 300 to one and over half of the counsellors have only part-time counselling responsibilities.

There are, furthermore, so many other demands on guidance counsellors (personal counselling, preparation of post-secondary institution applications and administrative tasks) that there is little opportunity to focus on career counselling. Nevertheless, it should be possible for counsellors to provide needed services if the essential ones related to student progress, course selection and career choices are made a major priority.

Students can be viewed in terms of three broad categories: university-bound, college-bound, and those who will go on to work directly from secondary school. The admissions requirements and career implications of university and college

programs are relatively clear, with sufficient up-to-date information generally available. But this is not usually the case for careers that do not require post-secondary education. There must be a marked increase in the amount and quality of information made available to the 70 percent of students who enter into the workforce directly from school.

As described earlier, career opportunities in the manufacturing sector have to be viewed by young people as being more attractive and attainable than they are at present. School counsellors can play a significant role in overcoming the attitude barriers related to entering certain trades and technology programs. Stability, status, economic return and career patterns have to be presented in a context of relevance and opportunity. Emphasizing the critical guidance department functions can lead to more realistic career and course choices by young people and contribute to the lowering of dropout rates.

37

RECOMMENDATION 3: Enhancing Career Education

Career education programming should be assigned more importance within the school systems and should enlist the efforts of those outside the system — business, labour and communities — to ensure that advice on employment opportunities is both accurate and current. This aspect of guidance should take many forms, including the planning of career education days, liaisons with local business and industry to provide current information to students and involvement in co-operative education program planning.

CREATING A COMMON SCHOOL EXPERIENCE IN THE TRANSITION YEARS

In education circles, the Transition Years have come to refer to the three or four-year period in early adolescence which precedes the legal school-leaving age of 16 years. This is a time of extraordinary social, emotional and intellectual turmoil for many young people. It is also the point in their educational development when they face many critical choices, including whether they will remain in school, what course of study to complete if they do pursue a high school diploma or aim for a post-secondary education and what career options await them based on these decisions.

The notion that the legal school-leaving age should be marked by a logical turning point in a student's career underlies much reform taking place in school systems around the world. This is the thinking behind the nine-year Grundskola in Sweden and its equivalent in Norway, which offer a core education that spans the ages of 7 through 16. Japan, Italy and Switzerland all have three-year middle schools that take students to the end of compulsory schooling. This is also the logic behind the Minnesota Plan in the U.S.

Another emerging notion is that there should be a common educational experience until legal school-leaving age is achieved, after which specialization or selection may begin. Delaying selection beyond the elementary school years characterized the early stages of school reform in most Scandinavian countries, the 1975 Haby reform in France, recent developments in some states of the Federal Republic of Germany, and comprehensive school reform in Great Britain. The importance of a common educational experience for young adolescents is underlined in a landmark

U.S. report recently published. Called *Turning Points: Preparing American Youth for the 21st Century* (June, 1989), this report is the work of the Task Force on Education of Young Adolescents for the Carnegie Council on Adolescent Development.

In Ontario, the idea of an unstreamed, common school experience to school-leaving age came to public notice in 1980 when it was suggested in submissions to Ontario's *Secondary Education Review Project*. Recent initiatives announced in the Ministry of Education's action plan for 1989-1994, and interest sparked by the 1987 Radwanski report on dropouts, form the basis for the directions the Premier's Council endorses. The Council recognizes that the government's five-year action plan for restructuring education envisages the conversion of Grade 9 to an unstreamed component of the Transition Years by 1994. To facilitate progression to a common school experience for all to the end of compulsory schooling, the process begun with this reform could be continued and carried to its conclusion in Grade 10 by

EXHIBIT I.11 An Action Plan for Restructuring of the Education System

		Ministry of Education Action Plan 1989-94		Proposed For Completion By The Year 2000
Grades	Present System			
JK/SK	Elementary (Primary)	Foundation Years		Foundation Years
1				
2				
3	Elementary (Junior)	Formative Years		Formative Years
4				
5				
6	Intermediate			
7				
8	Intermediate (3 Streams)	Transition Years		Transition Years
9				
10	Senior (3 Streams)	Specialized Years (3 Streams)		Specialized Years (2 Streams)
11				
12	OAC	OAC		OAC
Ontario Academic Credits				

the year 2000. A gradual extension of the Transition Years from the current system through Grades 7-9 to Grades 7-10 would allow a range of pioneering programs to be developed before going to system-wide implementation and would provide ample opportunity to develop the necessary in-service training and curriculum adjustments. It would also reassure the educational and broader communities that there would be no sudden changes in schooling and that proper planning and preparation for change were taking place (See Exhibit I.11).

This proposed structure could provide greater opportunities for attention to students in the critical transition years of schooling. Studies of dropouts uniformly reveal that more attention and more personal interest from teachers are instrumental in preventing failure and persuading them to stay in school. John Goodlad's influential study of U.S. schools, *A Place Called School: Prospects for the Future*, produced extensive data to

show that the challenge of lowering the dropout rate could be met by ensuring a common school experience for all to the end of compulsory schooling. The Carnegie Corporation's Turning Points report certainly endorses this approach in its proposals for transforming the education of young adolescents.

The success of a common curriculum depends to a large extent on modifications in teaching methods that permit more attention to individual students. Assembling a team of teachers who would be responsible for the teaching of core subjects to a group of students over the transition period could prove very effective in this regard. The team teaching approach enables students and teachers to get to know one another well and permits individual student needs to be met within the home classroom. This approach offers other advantages: it allows teachers to structure learning activities to accommodate students better and puts teachers in a strong position to assess the special abilities, interests and problems of students.

RECOMMENDATION 4: Creating a Common Curriculum

A common destreamed curriculum in Grades 7-10 should be put in place by the year 2000. Progress toward this common curriculum should be the object of constant review and critical evaluation.

The extension of comprehensive, destreamed schooling to Grade 10 should be phased in gradually and rationally to allow for adequate preparation. Such preparation could include:

- Specifically funded pioneering projects;
- Field testing and experimentation;
- Development of appropriate teacher training programs;
- Reallocation of physical space and facilities.

Special consideration should be given to developing middle schools in which teachers and students in the core subjects would be grouped together throughout that period to monitor and meet the needs of students more effectively.

Programs in the latter years of secondary school should be differentiated, emphasizing certain areas of concentration while still presenting a full range of choices at the end of Grade 12. Whatever programs students pursue in these years of specialization, they should continue to have access to as broad and general an education as they had in their earlier years. Such programs, though specialized, should not restrict unnecessarily the range of learning to single streams or jobs. In a world where careers can no longer be considered fixed or change-proof, narrow specialization does not make sense.

Such senior programs would allow much closer connections among industry, labour, post-secondary institutions and the schools. Apprenticeships and work linkage schemes could be developed with regional industry; special certifications could be created for certain employment fields or community college programs; and clusters of prerequisite Ontario Academic Credits (OACs) could be assembled as preparation for particular university degree programs.

The specialization issue raises the question of how to deal with currently differentiated levels of study. At present, the secondary school system arranges much of the curriculum into

three levels of difficulty: advanced, general and basic. There would be no place in a specialization scheme for the current basic level of study, one that is stigmatized and shunned by most students in any event and from which dropout rates stand at unacceptably high levels.

There is a case to be made for the provision of an advanced level for some courses designed to lead to university entrance. A general level should be retained as a means of providing a framework for progress in subjects that are not preparatory to university study. This bi-level scheme should be retained because it contributes to the sense of continued progress and achievement that encourage students to remain in school.

RECOMMENDATION 5: **Developing the Specialization Years**

The beginning of the specialization years should present most students with a range of choices: leaving school to enter the paid workforce or a training program; continuing partly in school and partly in the workforce or a workplace training program; or continuing in school in order to complete a diploma.

The widest range of options should be offered to all students whether or not they choose to complete their diploma.

THE LEVERS OF CHANGE

41

Effecting change in a large, decentralized and multifaceted system like education is a difficult undertaking. Achieving change is partly a matter of determining where the effort and investment can best be focused. In recent years, a considerable body of educational research has emerged on what constitutes an effective school and the conditions which most influence student performance. Among the many criteria that are perceived to make for good schools and good students, some key factors that stand out include effective evaluation, quality teachers, strong school leadership and good school-community relationships.

EMPHASIZING EVALUATION

Monitoring, benchmarking and assessment are all distinct processes that education systems use to define, measure, compare and improve achievement. These methods serve various ends, the most important perhaps being the setting of goals and the accountability for progress toward those goals. The Premier's Council is encouraged that the Ministry of Education has proposed and is implementing some significant initiatives in evaluation. In the discussion which follows, the Council suggests directions for enhancing the evaluation efforts.

Monitoring Achievement for Schools

Monitoring school achievement involves measuring student performances across a whole school system. Although students are given tasks to perform as individuals in the testing process, the goal is to produce statistical information that will indicate how the school system as a whole is doing. Too often, such testing serves to stoke fears of declining standards or to feed complacency over stable or rising standards. The real aim is simply to discover those areas of the curriculum that may require closer study for improvement. After all, it is important to know which changes to the school curriculum are moving ahead satisfactorily and which are not.

Effective monitoring depends on certain factors. If monitoring is not to interfere with the day-to-day business of the school, it is best carried out by independent agencies. It should not be based on abstract questions or ones that depend on recalling facts, but should rely rather on complex problem-solving and open-ended writing within a context that is recognizable to the student. Monitoring should also be related to provincial guideline content and goals at the given grade, not based on skills and knowledge conceived independently. Monitoring must not be a burden on students; it must be

conducted with a representative sample of students at each year and staged so that students would not participate more than once in their school careers. Monitoring must also be constructed to provide bases for comparison with other systems so that we know where to look for possible solutions to problems we discover. Finally, the results of such processes should be regarded as important indicators of educational trends that form part of the regular public and statistical reporting procedures.

Benchmarks for Students and Teachers

Benchmarks are an evaluation system designed to assist teachers and learners in determining areas of strength and weakness as a basis for making progress together. Benchmarks are actually videotapes or print materials demonstrating the range of student performance on a particular learning task. They give typical examples of what students at a given grade level can read, how well they can write, compute, measure and apply mathematics to everyday problems, and how well they speak and enter into discussion.

Benchmarks provide insight into student learning: how they solve problems, how they move from one step to another, or how they lose their way. They give meaning to the learning tasks required by provincial guidelines and offer specific standards with which to work when evaluating the student achievement over a period of time for the purpose of assigning grades and reporting. Teachers can demonstrate them to parents and guardians, thereby paving the way for closer and more productive cooperation between teachers and parents. The focus, consistency and school-home communication that benchmarks can provide are all the features of effective schooling and student retention programs.

Comprehensive Profile Assessment

As students move into the Transition Years, they will require every available form of assistance in deciding how to proceed with further education or select eventual employment. Appropriate methods of assessment, together with a student's cumulative record and the school's knowledge of the student's interest and abilities, will be needed to form a comprehensive profile. The development and use of such profiles is common in countries like Sweden and the procedure is well worth developing in Ontario too.

Comprehensive profile assessment, combined with effective individual counselling, enables students to make informed choices. It provides an opportunity for broader understanding and recording of students' abilities to apply skills. This broad and differentiated profile allows each student to develop a better sense of self, which in turn can develop better social competence, independence and commitment to effort.

RECOMMENDATION 6: Emphasizing Evaluation

Ontario should introduce a sampling system for the monitoring of general standards in schools as an incentive for improved performance. This evaluation system should have the following characteristics:

- *Independent evaluation by an outside agency;*
- *Performance testing on meaningful, complex problems, as opposed to factual recall, in a context recognizable to the student;*
- *Performance testing based on provincial guideline content and goals for grade levels;*
- *Results for the province as a whole published annually;*
- *Structured to provide public accountability without interfering directly with daily instruction.*

Province-wide use of benchmark evaluation should be introduced to cover at a minimum the following areas:

- *Reading, writing, speaking and listening;*
- *Abstract problem-solving;*
- *Mathematics;*
- *Science;*
- *Technological literacy.*

Ontario should develop a comprehensive profile for each student in the transition years to be used in recommending possible further education or suitable work placement, including apprenticeship,

Ontario should issue a comprehensive report card to the public each year identifying:

- *Short and long-term goals;*
- *Progress on the retention/dropout rate;*
- *Performance on international tests;*
- *Major system innovations over the past year and proposed system innovations.*

As the economic order changes, new ways of thinking and new criteria of achievement must be developed. In the new global economy, less importance will be attached to the ability to memorize factual knowledge and more importance will be placed on the ability to retrieve it from mechanical sources. There will also be increasing emphasis on the role of analysis, synthesis and evaluation of information, since the fruits of such thought will help solve problems in real settings. Graduating students will have to feel comfortable and confident in a world that prizes the skills of decision-making, problem-solving, critical thought, and creativity above the ability to regurgitate disconnected facts in the fashion of trivia games.

The new global economy will also emphasize the need to integrate mental and manual skills in our encounters with new technologies. The most efficient technological workers will not be those who specialize in routine use of machines, but those who interact creatively with them. We not only need to know how to use the machines that facilitate production, but also how to adapt and maintain them for better use. We are surrounded by mysterious gadgets in our everyday life and yet most of us are reluctant or unable to intervene in their maintenance. Our school learning too often separates our scientific learning from any practical application to everyday technology. School curricula

REVAMPING TEACHER TRAINING

must help demystify the gadgetry that surrounds us in preparation for a workplace in which we will work knowledgeably with the machines we will find there.

Team work in the workplace is also increasing in importance. And yet our schools too often set students to work alone and competitively on isolated tasks, as though the assembly-line and the traditional division of labour were still the models of production or office-work we were preparing our students to enter. Work in this cooperative climate will place increasing emphasis on small group projects that combine skills, that require the organization of multiple tasks, that tie the group's own evaluation of work accomplished to the improvement of processes and skills at the group level. Group responsibility for the contribution of each of its members is a far surer buttress against individual failure than assigning individuals to groups pursuing simpler skills (by placing them in lower streams) or increasing the value accorded to lesser achievements (by lowering standards).

The restructuring of the school system suggested earlier will yield a far richer understanding of each student and facilitate linkages with employment or further education if we revise our notions of student achievement with several aims in mind. We need to broaden our definition of student achievement; we need to understand its relevance in the context of emerging realities in the workplace; and we need to establish more specific connections between particular patterns of achievement and careers in which such achievement would be useful.

The program of restructuring outlined above will require extensive revitalization of teacher training and school administration. The need for such reform is now widely recognized, and the urgency of it is growing as the pool of teachers in the province dwindles and grows older.

Ontario faces the prospect of a shortage of trained teachers. Many school boards have already reported that they are having difficulty hiring teachers, particularly in mathematics, physics, chemistry, technological studies and French-language studies. Estimates suggest that by the mid-1990s there will be significant shortfalls as teacher retirements alone will equal the present number of teacher education graduates. The system's mounting demand for teachers appears to be the result of a number of phenomena coming together: the increase in the Ontario birth rate, immigration, kindergarten expansion and improved teacher-pupil ratios in the early years. Unfortunately, the supply of teachers from Ontario's universities is not expanding at nearly the rate that would allow rising demand to be met.

As a position paper written for the Ontario Teacher Education Review Committee observed, teachers' education "must be seen as a continuum, from pre-service through induction to in-service — that is, through the entire teaching career."⁵ The Premier's Council concurs with this view and suggests that those entering the teaching force would benefit from a more comprehensive training effort that might include a one-year pre-service program following a four-year B.A. or B.Sc., an induction period in which new teachers would work with mentor teachers, and an apprenticeship period in which teachers

⁵ M. Fullan and F.M. Connelly, *Teacher Education in Ontario: Current Practice and Options for the Future*, 1987.

would be able to spend some time working alongside innovative, experienced teachers prior to reaching the highest teaching ranks.

But revamping pre-service training will do little to change the practices of the majority of our present teaching force to meet the changing needs of our society and economy. The average age of our teachers is in the mid-forties and twenty years have elapsed since most of them received their preservice training. Over that time the understanding of how children and adults learn has fundamentally changed, and the demands placed on teachers have also multiplied. While at least one-quarter of teachers at any one time are pursuing further studies to upgrade their qualifications, they are all confronted with the need to adapt to new teaching methods, new curriculum, new technologies and vast amounts of new information. There is growing concern that the professional development of teachers is falling short of the demands placed upon them. Training efforts are often quick courses that are rarely intensive enough to tackle such demands successfully.

School-based curriculum initiatives which are practical but at the same time supported by theoretical understanding should be part of teachers' ongoing professional growth. Yet the new methods required to teach under recent provincial guidelines have not taken root in many classrooms. For whatever reasons, there is a general public impression that the schools today are dominated by new, progressive and permissive teaching practices, and that basic skills are being neglected. But objective observation of schools throughout the world finds great stability in teaching practices over the years:

Mathematics and the Language Arts dominate in the elementary schools we studied and are well represented in the curricula of the secondary schools. And the traditional procedures of telling, questioning, reading textbooks, performing workbook exercises, and taking quizzes were infrequently interrupted by so-called progressive methods of teaching and learning. If a predominance of rote learning, memorization, and paper-and-pencil activity is what people have in mind in getting schools back to the basics, they probably should be rest assured that this is where most classrooms are and always have been.⁶

The Premier's Council believes that greater efforts must be made to improve the teaching of math and science at the elementary level. The vast majority of elementary school teachers lack math and science training at the university level. There is growing concern that the teacher's own distaste for or discomfort with these subjects may be passed on to students. The Council supports the concepts of making university math and science courses prerequisites for teacher's training, and of encouraging those with a math and science background to enter teaching.

To tackle the immense challenge of revitalizing the present teaching force, the Premier's Council recommends a system of teacher centres that will allow teachers release time to learn from one another's practice and gain new insight. Processes that give teachers a central role in research and development to improve their own practice are important, too, as is the need to better integrate the flow of knowledge from university research programs and other settings to practising teachers. (Such

⁶ John Goodlad, *A Place Called School: Prospects for the Future*, 1984.

LEADERSHIP IN SCHOOL ADMINISTRATION

programs as the Teacher Resource Centres in the U.K. or educational study groups in Japan offer examples of similar initiatives.). Opportunities to engage in overseas study tours, specifically directed at understanding how other systems are meeting the same challenges, are worth encouraging and expanding. (Here again Japan leads the way). Summer institutes that reward teachers for innovation and professional excellence have been used to good effect elsewhere and might be worth considering in Ontario as well.

RECOMMENDATION 7: Revamping Teacher Training

Pre-service teacher education should consist of a four-year B.A. or B.Sc. followed by a one-year teacher training program, cooperatively developed within the universities and coordinated to form a continuum over the five years.

Pre-service training for all teachers should include emphasis on techniques that tie school knowledge more closely to the real community beyond the school, and particularly to the world of work.

Local in-service training programs should be developed and operated by teacher centres that are run by seconded teachers with program input from both the Ministry of Education and local communities.

In-service training for all secondary school teachers should include knowledge of changing conditions and demands in the workplace.

Incentives should also be considered for trained teachers to re-enter the profession from other fields. Special entry tracks and teacher training could be developed for recruits from the world of business, mathematics, science, technology and other fields. Summer institutes for teachers who have excelled in teaching and classroom innovation might be considered as offering further opportunities for professional development.

Flatter decision-making structures of the kind increasingly dominating the businesses and industries of today could have relevance for school management. To spread authority and leadership more evenly across the schools, teachers would have to be given the opportunity and time to work collectively on such processes as curriculum review, development and implementation within the broader provincial and local board frameworks. The vertical chain of command in today's school administration would also become less hierarchical with the introduction of renewable limited-term appointments to positions of responsibility, such as principalships, vice-principalships and department headships.

In the last decade or two, attention has focused more closely upon the importance of the school principal in creating a climate for educational success. Only 15 years ago, it was possible to say that "cultivation of the role of the school principal... is one of our least exploited avenues for school improvement."⁷ Since that time, research into how principals work and what constitutes the best measure of their success has proliferated. The "effective schools" research in the U.S., along with British research such as

⁷ Goodlad, *A Place Called School*, 1984.

Michael Rutter's "Fifteen Thousand Hours" study, have produced ample evidence that the role of the principal can be just as critical in improving the performance, behaviour and attitudes of students as that of the teachers. Indeed, when the techniques used in the study of leadership in business organizations were applied to the study of 275 American elementary and secondary schools, the principals were found to exercise the same influence on outcomes as managers did in large companies.

The picture of the effective principal as it emerged in Kenneth Leithwood and Deborah Montgomery's 1986 review of this research consists of the following:

- The achievement and happiness of the students is their highest priority.
- They view themselves as instructional leaders rather than administrators.
- They are exceptionally clear about both short-term and long-term goals for their students.
- Their relationship with teachers goes beyond "human relations" to "task-oriented" approaches.
- They mobilize parental and local community support for school program priorities.

From this research, Leithwood and Montgomery developed a four-stage model for the growth of the effective principal, starting with administrator moving to humanitarian, then to program manager and finally to systematic problem-solver. The systematic problem-solver is the principal who is able to derive and synthesize knowledge from a wide variety of sources, to mobilize the widest levels of support and stimulate the highest levels of participation from all concerned, to reorganize long-term goals into smaller increments for implementation purposes, to be willing and knowledgeable enough to intervene in a wide range of activities and settings to improve their schools rather than simply maintain them.

More recently, the *Turning Points* report of the Carnegie Foundation defined the effective principal's key attributes as follows:

- Political skill at helping people to solve problems;
- The capacity to articulate a broad educational vision;
- The ability to see and plan based on broader trends (in populations, or in resources available);
- The capacity to understand and deal effectively with the civic and political context of the school, construed as including the business community, policy makers and the broader public.

Despite the importance now widely accorded to principals, current preservice training for school administrators in Ontario is limited to two three-week summer courses, one on Program Development and Implementation and one on Program Supervision and Assessment. Within this program there has been little opportunity to go beyond the rudiments of the administrative functions. In 1988, Kenneth Leithwood at the Ontario Institute for Studies in Education proposed an alternative to these courses, one that built on the fruits of both the research into effective school administration and knowledge of what constitutes effective adult instruction.

Knowledge of the kinds of management skills required of administrators in (large) secondary schools as opposed to

(smaller) elementary schools has led to the suggestion that specific options related to the secondary and elementary levels be made available within the principals' courses. For the transitional and secondary years, such options would recognize the increased importance of the counselling role, a more complex planning function, and the mobilization of cooperative effort in broad across-the-curriculum initiatives. In the interests of growing a new relationship among school, workplace and the broader community, both a base of specific knowledge and the development of specific skills is also required.

Criticisms of principals' pre-service training have been extended to their in-service training, which is all too often structured to meet the expressed needs of participants rather than linked to school improvement. The inclination for in-service training to address specific school issues rather than to work specifically on the principal's role within such issues is another source of concern. Attention has focused on principals' institutes in the U.S. (at Harvard, Nashville, and the state universities of Texas and Oregon) and the Netherlands (Arnhem), where the emphasis is placed on systematic problem-solving and effective management. Such programs could be beneficial in Ontario.

RECOMMENDATION 8: Providing Leadership In School Administration

Principal training programs must be modernized and expanded to acknowledge their dual role as instructional leader and manager in a complex school system.

BUILDING BRIDGES

If students are to understand fully the value of a high school education and to make informed decisions about their future, they must have a clear understanding of the workplaces of today and tomorrow. Education and industry have often been described as two solitudes. Educators have tended to be wary of industry, claiming that its expectations have been unreasonable, narrowly focused and self-serving. Meanwhile, industry has been quick to dismiss the efforts of the education system as out of touch with workplace realities and inadequate to the task of turning out quality graduates who can function effectively in their jobs.

The gulf between schools and their communities must be bridged, as one business leader recently observed:

We have established barriers that must be taken down so that we can move into the next century with confidence — barriers between boardrooms and classrooms, between classrooms and boards of education, between provincial ministries of education... We have to get rid of our bureaucratic limits. Education is everybody's business.⁸

Current School-Work Linkages

Numerous forms of school-workplace cooperation are evolving across the province, albeit in a piecemeal fashion. Industry-labour-education councils have evolved in some regions of Ontario to facilitate the development of long-term partnerships. Through these councils, numerous initiatives have been organized and sponsored, and the communication barriers and

⁸ Robert Ferchat of Northern Telecom, *The Globe And Mail*, September 12, 1989.

misunderstandings between schools and local industry reduced.

Many forms of partnership are emerging at the local school level. Adopt-a-school programs are becoming a popular way for schools and a single company or group of companies to work together. However, there is growing concern that the goals of adopt-a-school programs may be too narrow and that the programs may be serving the interests of their corporate sponsors more than the broader goals of education.

Perhaps the most significant move forward in school-community cooperation is the development and growth of cooperative education. The growth in cooperative education has been rapid: enrolment in such courses in Ontario grew by 32 percent from 1986 to 1987 alone. Even cooperative education has its problems though. While the quantity of cooperative education has grown, we have no way of knowing yet if there has been a commensurate improvement in the quality of the experience. There are persistent concerns about students being used as cheap labour during their work placement. Another problem that must be addressed is the perception that co-op education, at least at the secondary level, is for 'losers' who are not academically oriented.

Furthermore, from the perspective of the Premier's Council, the cooperative education experience is not available to a broad enough group of students in a broad enough range of workplaces. The opportunity to experience cooperative education is often limited by the placements available in industry or by restrictive student eligibility criteria imposed by the school. Getting the right mix of students into co-op programs is perhaps the real issue here. The fact that most cooperative education programs take place in the service sector or in institutional settings may also limit their effectiveness. While the Council recognizes the oft-cited difficulties of establishing placements in a manufacturing setting, these are by no means insurmountable. Co-op programs can be successful as long as safeguards are in place to allay concerns regarding industrial safety, technical expertise, and the temptation to use such programs to erode regular employment. Perhaps if students were paid for their working time in co-op programs, the value of the work would be enhanced and the tendency for students to take on part-time jobs that eat into homework time would be reduced. Certainly, if co-op education is to become a useful and meaningful opportunity for everyone, it could benefit from the greater esteem accorded to paid work.

One recent initiative developed jointly by the Ministry of Education and the Ministry of Skills Development to combine schooling and workplace training in industry is the School-Workplace Apprenticeship Program (SWAP). It offers students who have completed Grade 10 requirements the opportunity to earn an Ontario Secondary School Diploma (OSSD) and apprenticeship credits concurrently. Over a three-year period, students attend school some of the time and are registered as full-time employees in apprenticeship programs both in the workplace and at a community college. At the end of that time, the students could be within one year of achieving a certificate of qualification in their particular trade.

Such programs are coordinated by committees broadly representative of the boards of education involved, community colleges, relevant ministry officials, industry and unions. Two models seem to have emerged. The one developed by Waterloo County Board of Education and used in several other Ontario

boards combines schooling and apprenticeship training throughout the three-year period; the other developed in the Durham Region Board of Education places more emphasis on the academic curriculum in the earlier stages. The latter model appears to offer better hopes of a strong academic component through early concentration. Although this tripartite program combining school, college and workplace is still in its infancy it represents one model for linking schools and workplace more closely. (The main thrust for expanded apprenticeship training will, however, continue to be felt within the framework of the community colleges.)

Schools and workplaces are exploring countless new ways of working together. Companies are providing career advice and information through mentorship programs, counselling, special career days and industry visits. Some companies are also providing opportunities for students and teachers to receive hands-on work experience through job-shadowing. Technical equipment producers and computer companies are donating and installing equipment and software in classrooms, bringing the technologies of today's workplaces directly into the classroom. Some schools, for their part, are allowing companies an opportunity to test equipment and software in the classroom.

The Premier's Council believes that every effort should be made to build bridges between school and workplace. More frequent and effective interaction between them will advance the goals and achievement of the student, the school and the workplace. While considerable progress on achieving these linkages has been made through the insight and initiative of individuals and groups at the local level, more can and should be done.

A New Relationship for School, Workplace and Community

In order to improve mutual understanding between schools and the workplace beyond and enhance work experience, cooperative education and school/workplace apprenticeship programs, these efforts must be nurtured much earlier in the school system than is presently the case. Privately-sponsored and broadly-marketed curriculum packages about work and careers, as useful as some may be in their own way, offer too little too late to assist students in making their choice. Nor can we look to guidance counsellors to play a career marketing role that will effectively influence student choices and enhance school-workplace relationships.

Institutional links between schools and workplaces should exist at both the regional and local school levels. Community linkage committees could bring together all the interested parties to investigate and coordinate suitable school-workplace linkage programs, with a special emphasis in the immediate future on the needs of the new global economy. A number of industry-labour-education councils have already been formed around the province with this objective in mind.

A new focus for local school governance must also be developed. School councils, such as those found in many guises and forms throughout the countries of Western Europe, can play an important role in fostering new linkages. The composition of such councils would have to be reflective of both the school constituency and the community beyond its gates. Naturally, such councils would also have to recognize the voice of school administrators, teachers, other relevant school employees and students, as well as the diversity of voices reflective of the

community from which it takes its students and to which it will release them. The mandate of such bodies would include the improvement of links between schools and workplaces in ways that secure the support of all the stakeholders. Such councils would be particularly important in all schools from which students might move directly into the paid workforce or job-training programs. Such councils would have no role to play in elementary schools, where the more family-oriented home and school associations or parent-teacher associations are well-established.

There are many initiatives that can be undertaken locally, regionally or provincially to try to enhance school-community relations. Some of these could be promotional: joint industry campaigns to urge students to complete their high school education, or to promote an interest in technical, trades and science education. Career days sponsored by industry and centred on areas of highest priority are another possible approach.

Schools could also consider ways to incorporate the broader community, including industry, into such activities as career guidance, mentoring and even support to team-teaching projects. To improve the mutual understanding of school and the working community, consideration should also be given to programs of educational exchanges and visitations between teachers in schools and people involved in training programs located in the workplace or sponsored by unions.

RECOMMENDATION 9: Building a New Relationship for School, Community and Workplace

All school boards should establish community linkage committees with a mandate to review school programs for their relevance to the economic and social life of their communities. These committees should include appropriate board teachers and administrators, along with representatives of local labour and management groups (of both private and public sectors) and other community groups that play a prominent role in the social and economic well-being of the community.

Schools should consider establishing school-based councils, whose mandate could include development of linkage programs specific to that school and its community. The membership of such councils would parallel that of community linkage committees and include senior students.

The community and school-based committees should undertake a variety of activities, including

- Promotional activities that encourage high school completion or an interest in technical, trades and science education, or industry-sponsored career days in schools;
- Participation in school programs such as career guidance, mentoring and support for team-teaching projects;
- Visits and educational exchanges and visitations between trained teachers in schools and those in educational programs located in the workplace or sponsored by unions;
- Expansion of co-operative education programs in the manufacturing sector;
- Expansion of school-workplace apprenticeship programs.

MEETING THE NEEDS OF THE NEW GLOBAL ECONOMY

52

BEYOND THE BASICS: EDUCATING AT THE POST-SECONDARY LEVEL

If elementary and secondary schools provide the foundation for lifelong learning, post-secondary education should advance this purpose by developing the critical skills required to contribute to both practical and theoretical knowledge. Post-secondary education should also impart the "learning how to learn" skills needed at higher levels.

The need for critical thinkers who can move beyond current demands does not apply only to areas such as engineering, science and technology that are traditionally associated with innovation. There is a need for skilled thinkers with higher levels of education throughout the economy. For many firms today, all new employees, including clerical workers, require a B.A or other advanced education that helps them adapt to new jobs, participate in developing new approaches and contribute to new knowledge.

The drive for increased competitiveness and higher value-added in Ontario means that escalating and changing skill requirements, along with the need for compatible new management strategies, will not just continue, but will intensify. Nowhere will these escalating skills be more important than in the areas where new products and services are developed, production and organization improved and markets expanded or created. These functions represent the cutting edge of development, and their effectiveness depends directly on the skills of scientists, engineers and technologists.

But increased competitiveness does not rely solely on the enhanced skills of scientists, engineers and technologists. It also requires the development of a broad range of skills distributed throughout an increasingly flexible labour force that is healthy and secure, active and innovative. The innovation necessary in all areas will build on the skills and the educational system the province already has. It will build on the strengths of the existing structures, resources and in-school population while recognizing the skill needs of our incumbent workforce. After all, three-quarters of the people who will be working in the year 2005 are already in the labour force.

Current critical skill shortages must be filled, but planning only for today's needs too often means planning for the past. The student training in high energy physics today may find that, by the time of graduation, it is mainly environmental scientists working on solar, tidal or wind energy who are required. To keep pace with the constant change that is characteristic of global competition, we require an accessible, diverse and flexible post-

secondary educational system that at the same time establishes a common, recognizable knowledge and skill base.

The Premier's Council review of the role of Ontario's post-secondary institutions is necessarily selective in concentrating on how they provide the labour force of the future, with particular emphasis on the supply of scientists, engineers and technologists. The issues are complex and many transcend the institutions or involve matters usually determined within the institutions. Nevertheless, the Council attempted to examine the situation in Ontario's 23 Colleges of Applied Arts and Technology and 16 universities (including Ryerson Polytechnical Institute) to determine whether the existing system is adequately prepared and positioned to build a highly skilled labour force that must become one of the hallmarks of the greater value-added economy to which we aspire.

As the Premier's Council has tended to focus its policies on the traded sectors, the emphasis in this chapter will be on the demand from these sectors for people with advanced education. But determining the labour requirements of the traded sectors is no easy task, given that a wide range of jobs exist in these sectors and that what is traded is constantly changing.

The traded sectors have traditionally involved goods production, and much of what is currently traded still flows from the manufacturing and resource industries. But increasingly, services like finance, education, utilities, transport, communications, management consulting, architecture, engineering, accountancy, and tourism are being exported. With the exigencies of globalization in general and the Free Trade Agreement in particular, the opportunities for expansion in the traded services may grow. Moreover, given that more than two-thirds of the labour force currently works in the service sector and that the proportion is likely to increase in the future, a people-oriented agenda cannot help but take these sectors into account.

The continued competitiveness of the traded sectors will depend in large measure on the education and skills of the labour force, as well as on management strategies. The current reliance of the service sector on a sufficient supply of youth, immigrants and women has meant that there has been less pressure in these businesses to increase productivity and innovate, to develop a more highly skilled workforce and to introduce new management techniques. Faced with the rigours of tougher international competition, however, these service industries will need a different kind of labour supply if they are to survive within the province, let alone enter the global market.

The escalation in education and skill requirements is as true of all areas as it is of the traded sectors. The Japanese and Swedish experiences make it clear that innovative and sophisticated social support services are necessary to ensure a healthy and secure workforce for the traded sectors. Moreover, innovations in such services as health and welfare could both help set international standards and become internationally traded themselves.

While the traded sectors rely heavily on an available supply of technologists, engineers, mathematicians and scientists, they also depend on many other kinds of workers. Firms are increasingly hiring only 'skilled learners', often defined as those with post-secondary education. This emphasis on ability to learn allows companies greater flexibility in retraining and reassigning

IMPROVING ACCESS

people as needed. Employees with good learning skills are also most likely to contribute to the productivity increases and develop new products or services.

These trends in industry point to the need for all career-oriented programs in colleges and universities to be reviewed, and if necessary revised, to ensure that they offer sufficient general education to enable graduates to function beyond the context of job or career specific knowledge and skills. There is also a need to ensure 'economic relevance' in post-secondary studies, as will be discussed later in this section.

The fact that the traded sectors are expanding into new areas and are demanding new skills in a wide range of jobs has important implications for post-secondary education. Employers have identified two different kinds of needs: the need for well-qualified graduates from specific programs or disciplines and the need for workers with new skills in all areas. Few fields of study can remain untouched by these labour force demands.

Concern over the supply of graduates in technology fields has arisen in part because of the declining number of youth available, the decreasing number of immigrants with traditional skills and with English or French language skills, and the high dropout rates. Moreover, although women have flooded into the labour force and into post-secondary educational institutions, accounting for most of the increase in recent years, they have moved much more slowly into technology and engineering programs. Yet many more women have entered into traditional male fields such as chemistry, physics and biology, as well as into business, medicine and law. If women are not entering the technology fields to the same degree, perhaps the problem is not so much women's attitudes toward traditional male work as it is the structures of programs and jobs offered.

How to attract and retain students in technological studies is not simply a marketing problem but also a question of the structure of programs and of the nature of the jobs available upon graduation. It is a question of access as well. More consideration has to be given to gearing programs to the people who are available: older workers, women, the unemployed, immigrants and the handicapped, particularly since the pool of potential workers who are young males with English or French language skills is dwindling. Colleges and universities should therefore take further steps to provide access to success, and not merely access to admission, to all who could benefit from their programs. Specifically, these steps should be aimed at the elimination of those perceived and real barriers to success encountered by women, by older students, by persons of colour, by immigrants and by the physically handicapped.

Inclusive marketing strategies are important to these efforts, but are in themselves insufficient to overcome the wastage in potential talent. Throughout our post-secondary institutions, the climate must change to one which welcomes qualified individuals from traditionally disadvantaged groups.

Overcoming the real access barriers may depend on providing the remedial basic education in post-secondary institutions that allows disadvantaged groups to be full and qualified participants in the education system. Such remedial activity cannot be taken on by institutions without some degree of additional funding to support these much-needed efforts. Such

EMPHASIZING GENERIC SKILLS

funding could be devoted to pre-session (preparatory) or in-session remedial education, depending on where the basic skills upgrading would be most effectively provided.

As well as needing graduates with specific technical skills or disciplines, tomorrow's workplaces are seeking students who are mature, who can communicate well, and who hold appropriate attitudes to work and learning. Employers also point to the need for a wide range of workers who have problem-solving skills rather than simply a fixed body of knowledge, who have interpersonal skills and the ability to work in teams, who have a combination of skills rather than a single speciality, and who have the ability to keep learning new content and processes. There is also a demand for employees who can implement and work with new management strategies designed to increase participation and create less hierarchical organizations. And finally, employers need and expect graduates with some common, recognizable knowledge and skill bases, but who are flexible and can be easily reallocated to new areas that require specific skills.

These expectations raise questions about the quality and structure of education. The lessons from business are applicable to post-secondary education itself. Business has learned that content, process and structures are inextricably linked, and this linkage is particularly important when their purpose is to develop communication and interpersonal skills, problem-solving and analytical skills, team work and learning to learn skills. In education systems, as in the workplace, what is required is critical skills training across the curriculum, new learning structures and more exposure to a range of disciplines. The question is not only how to produce more engineers, but also how to produce engineers and an entire graduating population that has a basic set of skills that will equip them for innovation, participation and adaptation. As an accountant recently explained, the demands on his ability to communicate, in writing and verbally with a range of people has risen steadily as his responsibilities have grown; unfortunately, his education was focused on numbers, not people or communication skills.

The Premier's Council sees it as essential that there be an increased emphasis on generic skills in college and university programs. Although post-secondary institutions should not be saddled with remedial education to the detriment of their other functions, they should bear some responsibility for ensuring that certain core skills that cut across occupational fields and academic disciplines are underscored. Colleges and universities should be responding to broaden workplace requirements by providing analytic and problem-solving skills, functional literacy, numeracy, technological literacy and communications and interpersonal skills.

The assurance of quality in business and education depends on four fundamental principles common to both spheres:

- Good quality begets better quality.
- Quality should come before anything else.
- Quality should be rewarded.
- Quality must be measured every step of the way.

The quality of education is determined by the quality of faculty and other staff as much as any other factor. Reduced financing in real per capita terms has meant that plant and equipment have aged, and that, in the universities, classes have become larger. Faculty members spend more time grading student work (or switching to machine-readable test results) and more time coping with inadequate resources in, for example, the search for scarce library books. As a result, they have less time for advancing their own education, for conducting research, or for developing innovative teaching techniques and curriculum. Reduced financing has also meant less faculty hiring, and the reduced attractiveness of post-secondary teaching as a career. There are fewer new faculty available to inject enthusiasm into the learning experience, to offer new ideas and to relieve the increasingly heavy workloads of the aging faculty.

The colleges and universities that form the post-secondary system in Ontario have quite distinct functions. While they share many of the problems related to attracting and retaining students, to ensuring quality and altering process as well as content, and to aging faculties and diminished resources, these issues are played out in somewhat different ways within each kind of institution.

REVITALIZING THE TECHNOLOGY PROGRAMS OF THE COLLEGES

THE CHANGING ROLE OF THE COLLEGES

Although the Premier's Council is interested in ensuring that all college students have the basic knowledge and skills necessary in the new global economy, the Council's primary focus for the purposes of this report is college technology programs and the ability of the college system, in its current form, to develop and upgrade the skills technologists and technicians require in the future.

57

Ontario's Colleges of Applied Arts and Technology have reached a threshold in their development. Established a quarter century ago, they are now seeking, through the Vision 2000 project, to clarify the broad mandate they were given and to revitalize their flagging image.

Ontario's college system was established in response to a diversity of economic, social and educational needs. The colleges were to be "a kind of institution that will provide, in the interests of the students for whom a university course is unsuitable, a type of training which universities are not designed to offer". They were to be accessible and flexible, embracing "total education, vocational and avocational, regardless of formal qualifications, with provision for complete vertical and horizontal mobility". They were mandated to provide "a wide variety of programs of varying length, including work experience programs, by day and in the evening, for adults as well as youth, and most probably more part-time than full-time students". The college programs, as originally envisaged, were to be "occupation-oriented for the most part; ... designed to meet the needs of the local community... commuter colleges". In recognition of the new age of technological change, they were to ensure "that adequate facilities be made generally available for the education and training of craftsmen, technicians and technologists".⁹

Over the last 25 years, the colleges have responded to this broad mandate in various ways. Together, the colleges serve over 110,000 full-time students through a variety of programs and have close to 800,000 part-time registrations in a wide range of areas. Although the colleges continue to enrol the bulk of their students in post-secondary courses in the areas of health sciences, applied arts, business, and technology, they have adapted and innovated to meet emerging needs. Today, they also constitute a major delivery agent for publicly-funded skills programs such as basic skills development, apprenticeship and

⁹ From a statement by the Honourable William G. Davis in the Legislature.

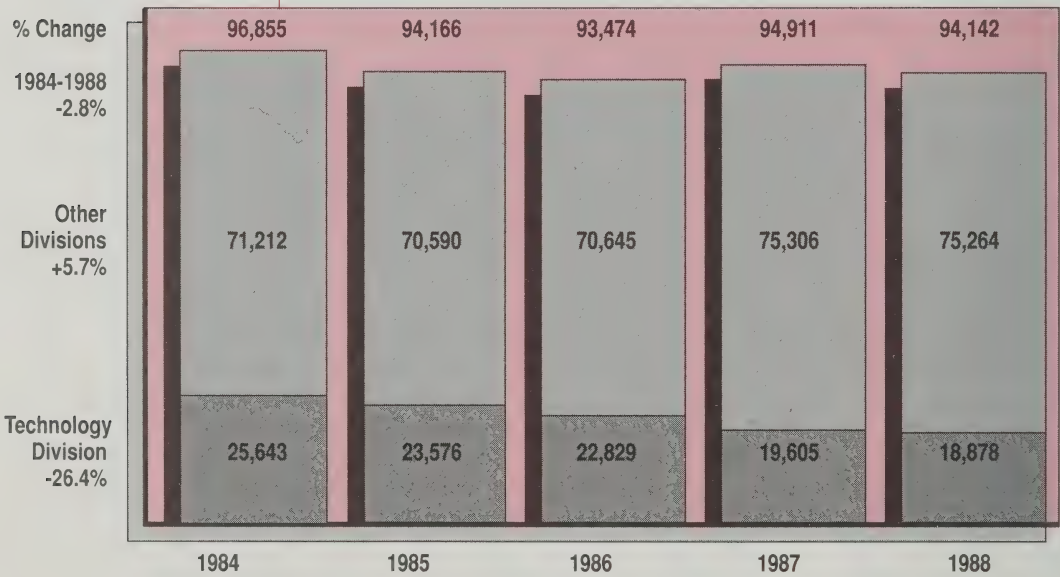
adult retraining. An emerging but still relatively small role for most of the colleges is the provision of customized contract training services to companies.

This diversification of college activities into new areas has been a response to community needs and is quite in keeping with their original mandate. What concerns the Council, however, is that one of the colleges' major functions — that of providing high-quality and relevant post-secondary technological education — may be threatened.

**DECLINING
ENROLMENTS
IN TECHNOLOGY
PROGRAMS**

Although college technology programs were quite popular throughout the 1970s, enrolment has declined considerably in recent years. Between 1984 and 1988, the total enrolment in technology programs at Ontario colleges declined by 26 percent, while enrolment in other divisions increased by 6 percent. According to research undertaken for the Vision 2000 review of the college system, between 1983 and 1987 the percentage of technology graduates available for work who obtained employment related to their field of study increased from 56 percent to 82 percent.¹⁰ While there were fewer people enrolling in technology programs, the demand for and placement of graduates grew considerably (See Exhibit I.12).

EXHIBIT I.12 Full-Time Post-Secondary Enrolment at Colleges of Applied Arts & Technology, 1984-88



Source: College Affairs Branch, Ministry of Colleges and Universities, June, 1989.

Although enrolments in other college programs increased during this period, there has been an overall enrolment shift, particularly among women, away from colleges and toward universities. From 1983 to 1986, the percentage of Grade 12 students going to college decreased by 12 percent, while the percentage of Grade 13 students going to university increased by 7 percent.

¹⁰ Vision 2000, Study Team 1, *Final Report*, "Appendix: The College System -- An Empirical Snapshot, Toronto: Ontario Council of Regents, 1990, p. 19.

The reasons for the decline in college enrolments in general and in technology programs in particular are complex and involve the attitudes and actions of students, parents, high schools, colleges and the labour market. Students, parents and educators often do not view a technological education or career as worth pursuing. This attitude is frequently part of a more general feeling that a college education is second best, and significantly less prestigious than a university education. Many students are not aware of what careers in technology entail and see technology programs as pathways to minor jobs.

Furthermore, as pointed out earlier, guidance teachers and other high school teachers, all of whom have university training, generally lack exposure to, respect for and comprehension of technological programs and careers. One high school graduate captured this attitude in a letter to the editor of a local newspaper:

Unfortunately, the people of this community, including teachers and employers, seem to believe that obtaining a university degree is the only way a student will ever become successful. Every grade twelve teacher I had last year told me they thought I was doing the wrong thing by not getting my OACs [the equivalent to grade 13] and attending university. Each of them... told me that I'd regret not having a "proper" education, and a community college diploma would not get me anywhere.¹¹

Not only are fewer young people graduating from high school, thus diminishing the pool of potential college students, but there are also fewer students in high school preparing for post-secondary programs in technology. The number of high school students taking math, physics, chemistry and technological studies courses has dropped considerably in recent years. In 1980, 82 percent of high school students in Ontario public schools took at least one course in technological studies; by 1986, the level had dropped to 57 percent. Thus, fewer students have developed an interest in or skills related to technology by the time they graduate from high school. As one educator put it, "Students are voting with their feet".

To make matters worse, colleges have not been very successful at filling in students' spotty knowledge about technology programs. Students who take most of their secondary school courses at the basic level often do not know that they are not served by the colleges. Research undertaken for Vision 2000 found that in seven of the colleges the minimum entrance requirement for all programs is a secondary school diploma at or above the general level. Another ten colleges indicated that a majority of courses must be at the general or advanced level or that they require general or advanced standing for almost all programs.¹² It should be made clearer to students and to all who influence their educational decisions that it is often the Advanced Level student with a strong background in math and science who can enter and successfully complete college technology programs.

Declining enrolments cannot simply be blamed on lack of

¹¹ *The Markham Economist and Sun*, October 19, 1988.

¹² Jo Oppenheimer, "The Relationship Between Schools and Colleges" in *Colleges and the Educational Spectrum: Background Papers on Colleges and Schools* (Toronto: Ontario Council of Regents, 1989), p. 31.

preparation and knowledge of opportunities or on attitudes. Some students' choices may be based on accurate information about technology programs and about prospects for jobs in technology. Enrolments in technology programs began to decline in the early 1980s when the probability of technology graduates getting jobs in their field was below that of graduates in other areas. Although job opportunities have improved considerably in recent years, the decision to enter technology programs is often made in the first years of high school. Thus, the time lapse between making a program choice and seeking a career in it means that market conditions may no longer match market supply. This time lapse could be partly overcome by focusing more on the development of skills that are more easily transferred from one program to another and from one occupation to another. This would allow students to move into programs without preparation for and commitment to jobs that may not be there when they finish and, more importantly, would allow them to acquire the flexibility necessary for the labour market of the future.

RECOMMENDATION 10: Emphasizing Transferable Skills

College programs should be structured to permit greater ease of transfer between programs and to provide a common set of generic skills that can accommodate a variety of career paths.

Although new enrolments may result from the increasing demand for college graduates, the employment and earnings opportunities for CAAT graduates as opposed to university graduates may still push many to take a degree instead of a college diploma. Immediately after leaving school, graduates from community colleges do relatively well in terms of both employment and earnings. But those with a diploma do not see their earnings grow as much as those with a degree, in part because they have fewer opportunities for career advancement.

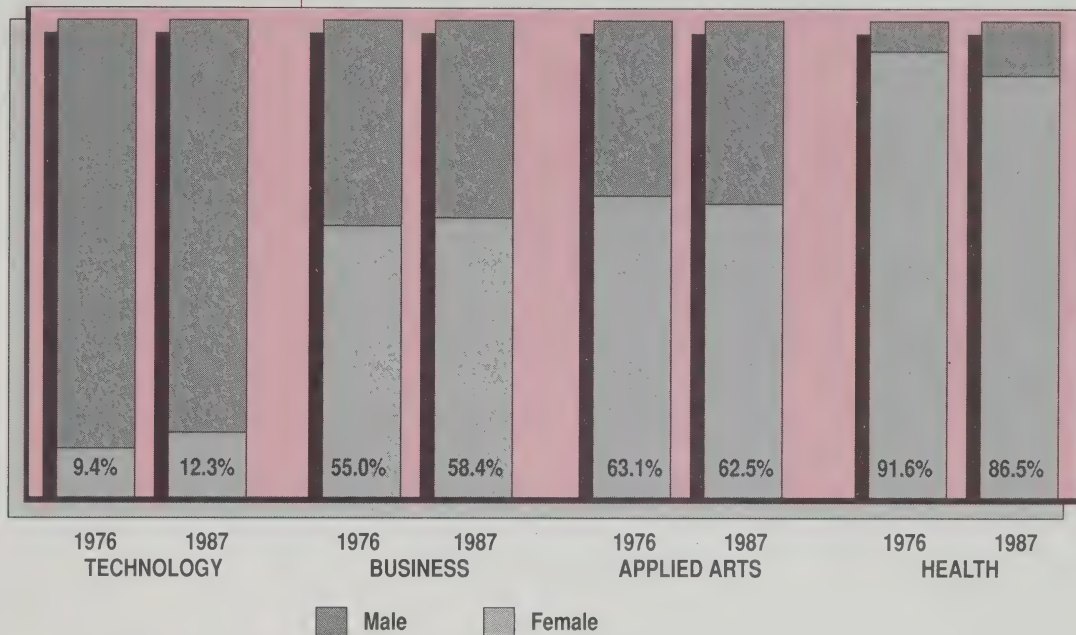
Similarly, it may be an accurate perception of opportunities that deter women from entering technology programs. While female enrolment in college technology programs has improved, it still remains abysmally low overall. In 1976, women constituted 9.4 percent of technology program enrolment; by 1987, the proportion had grown to 12.3 percent. In stark contrast, females represented 58 percent of business program enrolment, 62 percent of applied arts program enrolment and 87 percent of health program enrolment in 1987 (See Exhibit I.13).

Part of the problem doubtless lies with the exclusively masculine atmosphere which pervades some technology programs. In order to raise the unacceptably low female participation rates in certain college technology programs (and in certain university engineering programs), new initiatives are needed that make these programs more inviting to women.

Part of the problem also lies with gender-related salary differentials. According to research conducted for Vision 2000, men with college diplomas and women with university degrees have very similar age-earning profiles, yet females with college diplomas have the lowest earnings of all graduates.¹³ Overall

¹³ Vision 2000, Study Team 1, *Final Report*, "Appendix: The College System — An Empirical Snapshot: (Toronto: Ontario Council of Regents, 1990), p. 11.

Full-Time Post-Secondary Enrolment at Colleges of Applied Arts & Technology by Division and Gender, Fall of 1976 and 1987



Source: College Affairs Branch, Ministry of Colleges and Universities, June, 1989.

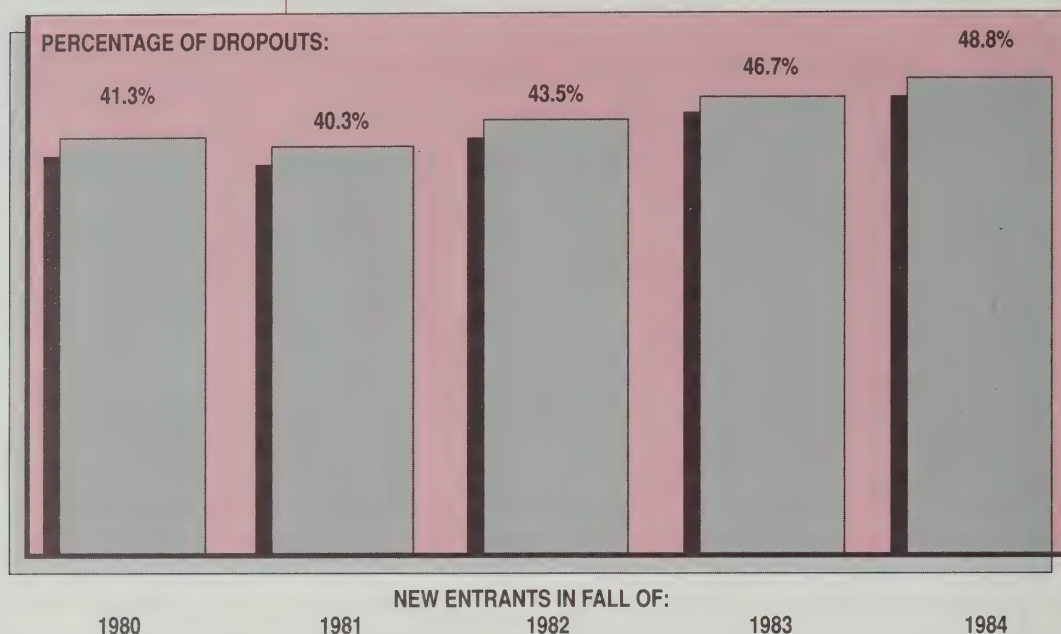
declines in college enrolment and the prestige of college education can only be addressed by a strategy that links college education to future jobs in the context of the new global economy. By focusing on the development of common generic skills in the early stages of a program and by making programs more flexible, allowing students to transfer readily within the post-secondary education system, colleges could prepare students for the continuous and participatory learning required in the future. By expanding the technical, scientific and communications skills of all students, the colleges could help alter the structure of the jobs currently available, in turn making programs more attractive. And by making programs more accessible to women, older workers, persons of colour, immigrants and the physically handicapped, the colleges could increase their potential enrolment pool.

LOW COMPLETION RATES

The high dropout rate for college programs presents many problems. Of the decreasing number of students who do enter colleges, only about half graduate either from the program in which they originally enrolled or from another program. Over time, the dropout rate appears to be rising. The greatest proportion of students who withdraw do so in the first year, although most of these dropouts are enrolled in two- or three-year programs. Attrition rates are equally high for students in applied arts, business and technology programs. Students in these divisions are twice as likely to drop out as are those enrolled in health sciences, where graduation is a strict requirement for entry into the career field. Students with a

EXHIBIT I.14

Dropouts from College Programs, 1980-1984

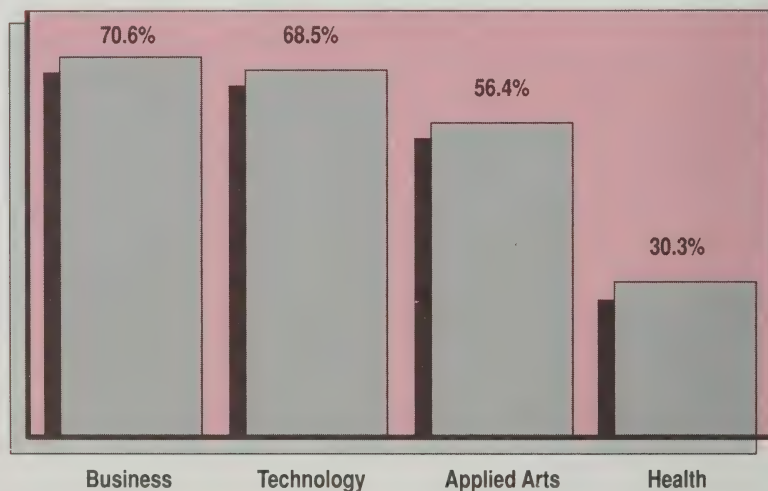


* Dropouts are defined as students who do not graduate from either their program of original enrolment or from another program.

Source: Financial Support Unit, College Affairs Branch, Ministry of Colleges and Universities, June, 1989.

EXHIBIT I.15

Percentage of Students Withdrawing from Original Program of Enrolment, New Entrants, Fall of 1984



* Withdrawal rate is higher than dropout rate as it includes those who withdraw and subsequently graduate from another program.

Source: College Affairs Branch, Ministry of Colleges and Universities, 1989.

Grade 12 background are about one and a half times more likely to withdraw than are students who have taken Grade 13. Also significant and perhaps surprising is the fact that men are more likely than women to drop out. Furthermore, attrition rates for students attending larger colleges are lower than they are for smaller colleges, a phenomenon that probably has more to do with the drawing power of the urban centres in which larger colleges are located than anything else (See Exhibits I.14 and I.15).

The high college dropout rates and the characteristics of the early leavers inevitably raise questions about the preparation, admission and experiences of incoming students. There is also a need to re-evaluate the attractiveness of the programs once students have entered them and about the kinds of jobs students see available at the end of their college studies. Many of these problems could be at least partially alleviated if students entering post-secondary programs were given more solid preparation for them and if colleges spend more time developing generic skills and providing social support. In preparing students for these programs and in offering them, colleges need to recognize student diversity (the combination of maturity, rich life experiences, and rusty academic skills often brought to college by older students for example), to encourage student participation in the structuring of their learning and to allow students as much as possible to move laterally among programs without penalty instead of dropping out.

RECOMMENDATION 11: Combating Dropout Rates

In order to combat the high dropout rates found early in college programs, the colleges should therefore establish or enhance pre-admission or orientation courses to enable students to explore, collaboratively and in a setting of social support, such topics as life skills, time management and study skills.

If colleges are to undertake these remedial functions, they will require additional funding and teaching staff to carry them out effectively.

QUALITY AND RELEVANCE

Given the quantity and range of college programs, the changing nature of and variety in employers' demands, and the large numbers of students involved, there is a diversity of opinion on how well colleges prepare graduates for employment. In the Council's discussions with companies, some indicated that they were very satisfied with the college system, while others expressed disappointment. In both the Council's research and that done for Vision 2000, however, there is extensive agreement on what is expected of the colleges.

The first point of general agreement concerns the need to provide all students with both a broadened general education and sound generic skills. Given the accelerating pace of economic change and the demand for intelligent cooperation at work, college graduates need to be able to set their specific technical skills in international and social contexts, to build on these technical skills by learning new skills quickly and enthusiastically, to communicate effectively, to work well in teams, and to analyze new situations and solve new problems with insight and judgment. This is a tall order, but an essential

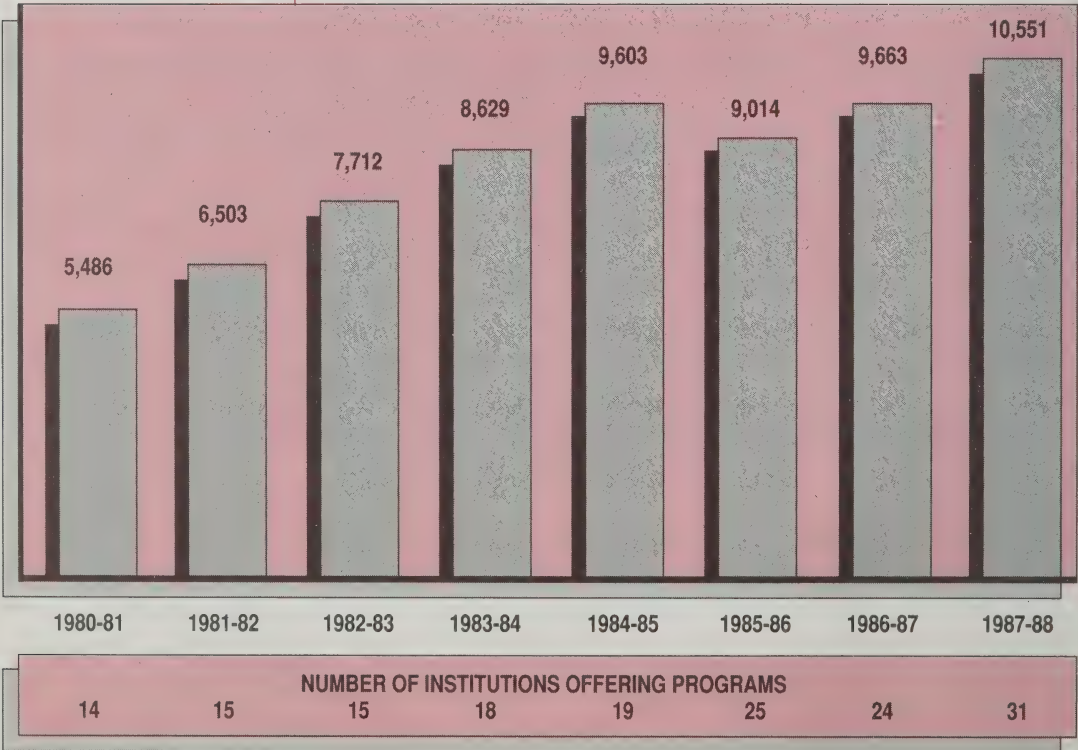
one, as Ontario creates and recreates the flexible, dynamic labour force required in these challenging times.

Second, and related to the call for a better general education for all students, is agreement on the need for common standards and a consistent credentialing process. There are technology programs in every college and in 162 different program categories. Yet for the most part, colleges set their own performance standards.

Individual colleges are expected to ensure program quality through internal operational reviews. This institutional determination of standards does help create a useful flexibility in the system and allows members of the institution to build on their strengths and determine their own programs. As we know from business, this flexibility and participation often lead to important innovation. But it can also result in considerable variation in what graduates know and are capable of doing, creating problems for the employers who hire them.

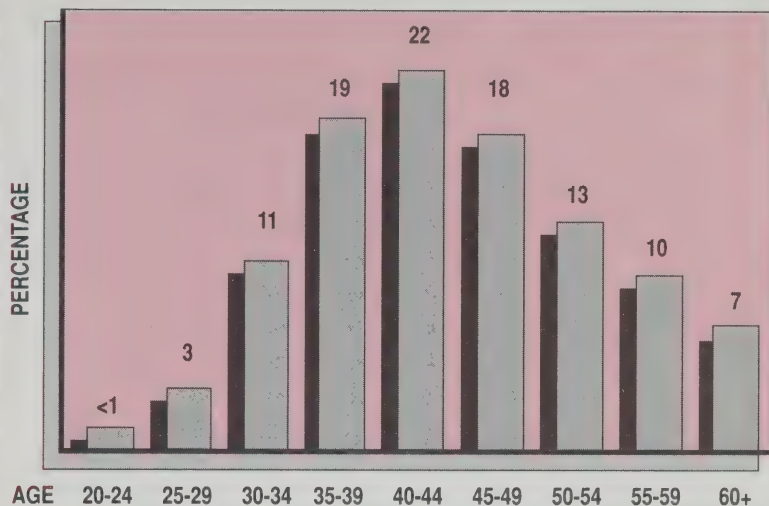
Program quality and standards are also set through consultation with local Program Advisory Committees (PACs). These local Committees facilitate the development of small programs designed for specific market niches and help adapt programs to local needs, which consequently tends to keep graduates in the region. But many consider the focus of the PACs too local, too short-term and too fragmented. What is needed is a system for maintaining diversity and local control, while at the same time ensuring the existence of some common standards.

EXHIBIT I.16 **Enrolment in Canadian College Cooperative Education Programs, 1980-81 to 1987-88**



Source: Canadian Association for Cooperative Education, 1987

Percentage Distribution of Full-time College Faculty by 5-year Age Groups, 1987



Note: Percentages do not add up to 100 due to rounding.
Source: Ministry of Colleges and Universities, 1987

There is general agreement on the need for colleges to remain public institutions that provide the generic, portable skills, upgrading programs and facilities for lifelong learning. Business and labour are often better equipped to provide the more specific skills required for particular jobs and companies, although these private training programs should also have a developmental component. Learner-centred programs will develop the mobility and diversity that workplaces increasingly require. This kind of division of educational emphasis, however, requires effective links among colleges, businesses and labour. And it requires all three sets of actors to think globally, and in terms of future as well as current needs.

Cooperative education and other supervised work experience components are particularly useful in promoting links between colleges and business and in ensuring relevance. Sixteen of the 22 colleges offer formal co-op education, with approximately 10 percent of the total student population participating in such programs. Furthermore, most other career-oriented programs in college include a supervised work experience component. But one of the problems with this approach is that the funding of college programs fails to recognize the additional costs associated with operating cooperative education. (This is a problem that secondary schools and universities also face.) Without changes to the funding, further expansion of cooperative programs may be limited (See Exhibit I.16).

Related to the concern for relevance and links with other groups is the difficulty with keeping faculty up-to-date on the latest developments in industry. Rapidly changing economic conditions, new technologies and new research create the need for constant faculty renewal. Many excellent teachers are already in place and will remain there for many more years (See Exhibit I.17). Support for exchanges with business, unions and

CENTRES OF SPECIALIZATION

other colleges or institutions, for time to conduct applied research, for secondments, for professional development leaves and for in-house training and further education, allows faculty to remain current in their knowledge and skills.

Lessons from business suggest that these programs should not be limited to faculty, but should include all college staff members. Moreover, they suggest the need for a shift of emphasis in college organization, with flatter management, more participation in decision-making and more teamwork. Also advisable would be a parallel shift of emphasis in student evaluation, with a greater focus on the assessment of their capacity to think and to solve problems, rather than their capacity to absorb detailed information.

Finally, the content and structure of college education should reflect and benefit from the diversity found among college students and employees, as well as in the population at large. Increasingly, college graduates will find themselves working with and serving people whose backgrounds are very different from their own. Moreover, as we become more fully integrated into the global economy, contacts with other countries will more and more become part of daily business. In preparing students to build bridges between west and east, north and south, colleges should take full advantage of the knowledge and experience of their own students, of their faculty and staff, and of those in the community groups they now serve and from which they receive advice.

The Premier's Council believes that the college system has a fundamental role to play in developing the technologists, technicians and other skilled workers required by Ontario's economy. However, if the college system is to play this critical role it must provide state-of-the-art technology education at consistently high standards. Graduates of these programs should possess both career-specific skills and a sound general education upon which they can build further.

While all colleges in Ontario offer technology programs, relatively few have the necessary equipment, expertise and excellence to be considered specialized sectoral or technology-specific leaders in education and training. If Ontario is to excel in key sectors or technologies, a continuum of high quality applied learning in those areas must be available in at least one college in the province for the development of new workforce entrants and for the urgently needed upgrading of the existing workforce.

There is a need for graduates with a more advanced education than that available in the colleges' current specializations. Advanced programs which combine a job-ready career-oriented college education with a liberal studies university education should be available to serve this need. The recognition of achievement in this combination of studies could take the form of a new kind of degree, diploma or certificate awarded jointly by a college and university or by an independent body.

At a time when lifelong learning is assuming new importance, the 'terminal nature' of an Ontario college education is a significant inhibitor of further study. The graduate of a college technology program in Ontario, for example, has three choices in the pursuit of a university education: attend Lakehead University which has a special program for technology program graduates; pursue a university education at a U.S. university or college which recognizes the Ontario diploma; or apply to an Ontario university and too often receive minimal or no credit for the

college courses taken. For many, therefore, the college program is viewed as a kind of dead end, a limited pathway that narrows almost impassably at the point of embarking on any new path of advanced learning.

RECOMMENDATION 12: **Centres of Specialization**

A selected group of college technology programs should be transformed into sectoral or technology-specific leaders in education and training and be designated “Centres of Specialization”.

These centres of specialization should serve the following objectives:

- Establish a level of excellence in education and training consistent with the needs of key sectors of Ontario’s economy;
- Ensure that Ontario’s technologist programs meet the quality of the best in the world;
- Provide a more advanced level of education than is currently available, combining job-ready, career-oriented education with an advanced liberal arts, general education;
- Provide flexible, state-of-the-art training and upgrading programs geared to the needs of industry and workers.

The achievement of the necessary level of specialization and excellences in these Centres will require the establishment of strong linkages with industry and communities particularly for access to and support for the most advanced equipment and up-to-date faculty. These Centres’ success will also depend on the establishment of innovative programs involving both colleges and universities and focused government investment. The Council recognizes that implementing the above recommendation will require the resolution of a number of issues related to funding, governance, credentials/degrees, and accessibility. The Council therefore recommends that a study be commissioned immediately to resolve these issues within a year.

ENHANCING UNIVERSITY EDUCATION

Although universities and colleges serve often distinct functions, they are now facing some very similar demands. Like colleges, universities are increasingly being pressured to provide a more sophisticated general foundation in communications and interpersonal relations, science and technology, teamwork and problem-solving for all students, whatever their discipline.

Almost half of the students who graduated with a bachelor or first professional degree from an Ontario university in 1987 studied humanities or social science. Most undergraduates in these fields move directly into the labour market where the technical knowledge required of them is increasing and job changes are becoming more frequent. Moreover, biologists and chemists, physical education specialists and physicists increasingly need to know how to work in teams, communicate their results to others, relate their work to social issues and move into new employment areas. In many of their current disciplines, undergraduates devote little time to developing this range of skills.

As is the case in the colleges, at the universities this problem can be at least partly addressed through specific foundation courses and partly through the development of critical skills across the undergraduate curriculum. Care must be taken to present such courses and objectives as occupying as central a place in undergraduate education and future career success as does the substantive content of courses taken in a student's area of specialization. A seemingly unconnected set of compulsory courses outside the area of specialization and skill-based course objectives will be perceived by faculty and students alike as an arbitrary imposition on their teaching and learning and will, as a result, be ineffective. Properly designed and understood throughout the university, broad foundation courses and skill-based course objectives can enhance both the making of connections across current discipline boundaries and the capacity of students to keep learning after their undergraduate days as new fields of inquiry and practice open up. These goals already inform some undergraduate programs and are particularly important for older students returning to formal education after a number of years at home or in the labour force. These goals are relevant to every undergraduate.

THE ENROLMENT- FUNDING SQUEEZE

RECOMMENDATION 13: Developing Foundation Skills in Post-Secondary Education

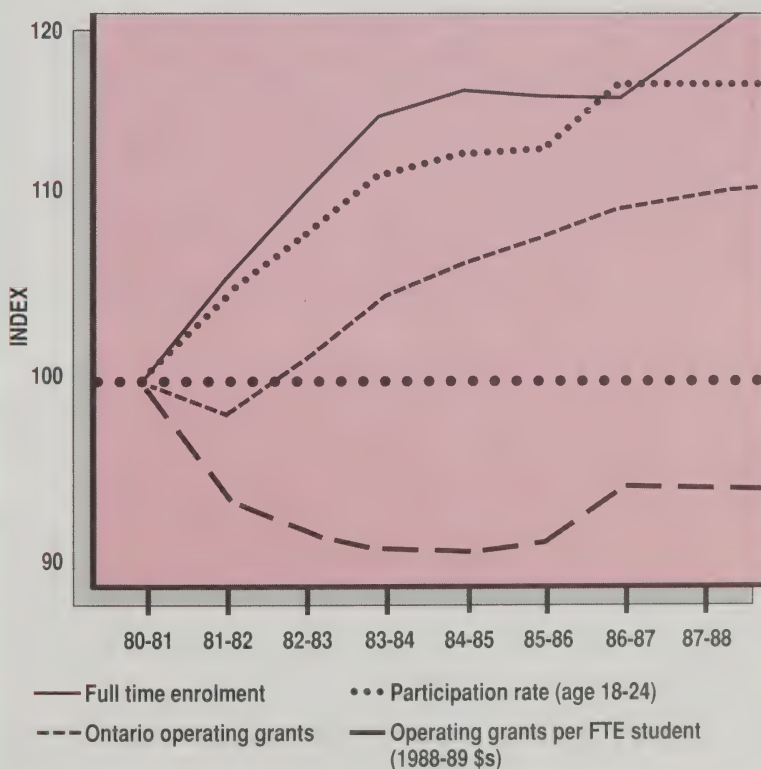
Universities and colleges should develop and maintain foundation courses and course content that will provide all undergraduates with a common set of sophisticated communication, numeracy and technical/scientific skills.

Unlike colleges, universities have seen their enrolments increase significantly throughout the 1980s. In the fall of 1988, 180,000 full-time undergraduates, 91,000 part-time undergraduates, and more than 30,000 graduate students were enrolled in Ontario's universities. Women have accounted for most of the past decade's increase and they now constitute the majority of all undergraduate students, both full- and part-time.

Universities are apparently not having a problem attracting people, although like colleges they often have trouble keeping students through to graduation. As is the case in the colleges, universities need more resources to provide support services and introductory programs to reduce the high dropout rate in the first year that amounts to so much wasted human resources. This support is most urgently needed, particularly for the growing number of female students, many of whom have heavy domestic

EXHIBIT I.18

Changes in Operating Grants, Participation Rates, Enrolment and Operating Grants per FTE Student



Sources: Enrolment : Ministry of Colleges and Universities; Participation Rates: Statistics Canada, *Education in Canada*; Ontario Operating Grants: Council of Finance Officers – Universities of Ontario (COFOUO), *Financial Report of Ontario Universities*; Operating Grant per FTE: Council of Ontario Universities, unpublished data, 1989.

EXHIBIT I.19**International Comparison of Expenditures on Higher Education and Participation Rates**

	HIGHER EDUCATION EXPENDITURES/ GROSS DOMESTIC PRODUCT		ENROLMENT IN HIGHER EDUCATION TOTAL POPULATION	
	%	Rank	%	Rank
U.S.A.	2.7	1	5.1	1
Canada	2.1	2	4.9	2
Netherlands	2.1	2	2.7	3
Australia	1.8	4	2.3	6
Sweden	1.3	5	2.6	4
United Kingdom	1.3	5	1.8	10
West Germany	1.1	7	2.5	5
Norway	0.9	8	2.1	8
France	0.8	9	2.3	6
Italy	0.7	10	2.0	9

Note: Since tabulation of education expenditures varies from country to country, this ranking and these statistics may not be reliable.

Source: UNESCO, Statistical Yearbook, 1988; National Center for Education Statistics, U.S. Department of Education, and Digest of Education Statistics, 1988 as taken from Rasell & Mishel, *Shortchanging Education*, 1988.

education as a percentage of gross domestic product and participation rates in higher education demonstrates that, while Canada does commit more funding to education than many other nations, we also have vastly higher accessibility to our institutions of higher education (See Exhibit I.19). These seemingly high spending levels must be spread over a greater number of students, thus diminishing considerably the 'buying power' of educational funding. It is worth noting that the funding of our universities on a per capita basis is significantly lower than the support per capita for even the weakest (in terms of support) state universities in the U.S.

The student of today covers significantly less of the total university bill than the student of 30 or 40 years ago. In 1951, tuition fee revenues represented 35 percent of total operating revenues. By 1986, the student share was about half that, with tuition fees accounting for 18 percent of operating revenues.

responsibilities to carry along with their academic loads.

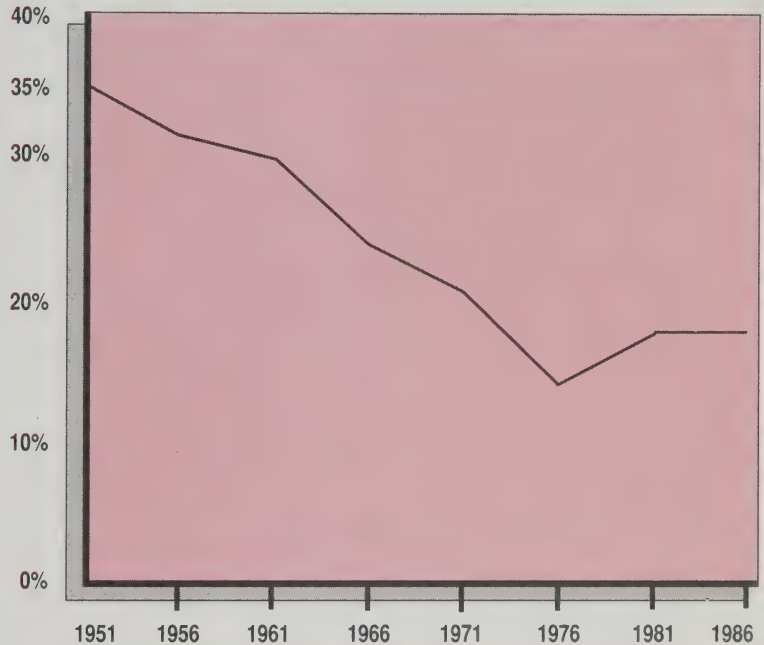
Ontario's universities are caught in the squeeze between rising enrolment and constrained funding. Since 1980, the participation rate in post-secondary education has grown considerably, yet operating grants have not grown at a comparable rate. In tightening their belts, universities have increased class sizes, making it more and more difficult for faculty to attend to the individual needs of their undergraduate students. The ratio of full-time (equivalent) students enrolled to full-time (equivalent) faculty members teaching has increased by 26 percent since 1970 to a ratio of over 16 to 1 (See Exhibit I.18).

An international comparison of expenditures on higher

Tuition fees have also declined as a percentage of family income: from 4 percent in 1971 to 2.5 percent in 1986. And while the province has attempted to offer some relief by allowing for an increase in tuition fees of 8 percent next year, this does not reduce the enrolment-funding imbalance and in fact continues to restrict the extent to which tuition fees can ameliorate the total funding picture (See Exhibit I.20). It is ironic that a system so strained in terms of public support charges fees that are so much lower than the real cost of providing public education, and indeed lower

EXHIBIT I.20

Tuition Fee Revenues as Percent of Operating Revenues, 1951-1986



Sources: Council of Ontario Universities, *Focus on Fees*, Interim Report, March, 1989.

than what most public universities in the U.S. charge.

Some highly successful experiments have demonstrated how critical resources and how uncritical exams are to the new kind of learning that is required. The McMaster University School of Medicine, for example, has abandoned formal examinations, in spite of the fact that medicine has long been associated with rigid and rigorous exams. Instead, the student is the main evaluator, although the student's views are continuously supplemented by those of peers, tutors, faculty and staff. Students are quickly introduced to a clinical setting and their problem-solving directed at medical situations. Instead of becoming skilled at passing examinations, students are required from the beginning of the course to "demonstrate their competence through the use of selective interactional skills".¹⁴ At the end of their studies, students do have to write the nationwide formal exams.

This kind of alternative to traditional learning does require additional resources, yet today the universities indicate that

¹⁴ Jack Haas and William Shaffir, "Taking on the Role of Doctor: A Dramaturgical Analysis of Professionalization," in Katherine Lundy and Barbara Warne (eds.), *Work in the Canadian Context*, Second Edition, Toronto: Butterworths, 1986, p. 343.

educational quality is being threatened as they fall further and further behind in attempting to meet the challenge of rising enrolments with diminishing funds.

Also unlike colleges, universities have a major research role which is expensive to fulfil. Universities play an essential part in advancing knowledge and in training the researchers of the future. Through the Centres of Excellence program, Ontario has made a serious commitment to intensifying the research effort in areas of internationally recognized strength and to expanding the linkages between the universities and industry. The participation of the Ontario universities in the federally sponsored Networks of Excellence will no doubt intensify the universities' research role. These special funding programs reflect a significant commitment to and recognition of the need to invest in innovation and fundamental research in the scientific and technological fields. However, effective participation in the new global economy requires an enhanced funding commitment to universities as a whole and science and engineering in particular.

Some have argued for increasing the role of tuition fees in financing post-secondary education. One approach to this would entail deregulating tuition fees. Others, however, have pointed to the potential adverse effects that such measures could have on accessibility. It has also been suggested that because higher tuition fees would require increased student assistance, their effect is not to relieve pressure on public resources but to shift the focus of that pressure. In many quarters, there is a strong belief that undergraduate education, at least, should be viewed as a continuation of the public education system and that access should be based solely on academic qualification.

RECOMMENDATION 14: Securing University Funding

The funding for faculty renewal and equipment upgrading should be augmented by:

- *Adjustments to government funding to reflect more accurately the investment requirements for programs in science and engineering*
- *Analyzing the potential risks and benefits of alternative means of increasing revenue, including changes to fee structures, fee deregulation, or greater reliance on direct provincial support. Such an analysis must reflect the strong commitment in the province to preserving and broadening access.*

More aggressive university campaigns are required to secure private sector donations to augment the funding for faculty renewal and to underwrite equipment upgrading, especially in science and engineering.

Universities should explore new forms of partnership with industry which look beyond pure financial support to new modes of cooperation, including the exchange of personnel.

Important as the universities' research role is to advancing the frontiers of knowledge and to stimulating students, teaching is equally important in developing the skills necessary for competing in the new global economy. Although there has always been pressure on faculty to research and publish, this pressure has intensified with the decline in university resources. Increasingly, faculty need research grants in order to pay for their paper clips,

**MATHS, SCIENCES
AND ENGINEERING:
GROWING DEMAND,
DECREASING SUPPLY**

photocopying and computer printouts. This often means that the most distinguished faculty are not available to teach and that those who are teaching have less time to devote to students. What is needed is greater recognition of teaching in itself and more resources for this work.

**RECOMMENDATION 15:
Rewarding Teaching Excellence**

Universities should therefore investigate ways of increasing the rewards and resources available to those who direct their efforts to teaching excellence.

Various forecasts predict that demand for engineers, scientists and technologists will increase significantly in the future. The Natural Science and Engineering Research Council predicts growth in demand from both the business and university sectors for scientists and engineers with post-graduate degrees. The Canadian Council of Professional Engineers estimates that demand for undergraduate engineers will outstrip supply by the early 1990s. The Technical Service Council also predicts a strong demand for engineers over the next decade, particularly for those with masters degrees and doctorates. Whatever the various forecasts predict, the real test of whether it will be supplied will be in salaries. It is the labour market, not the demographics, which tells young people to pursue M.B.A.s, C.A.s and law degrees.

There have traditionally been two major sources of professionals and researchers in these fields: immigration and youth. During the 1960s, immigration supplied approximately half of the new engineers in Canada. By the mid-1980s, immigration was supplying less than a tenth of the new engineers. Many major industrialized nations, including the United States, Sweden, Japan and the United Kingdom, are forecasting shortages in the 1990s. The competition for any mobile engineers will be tough, and immigration of these advanced degree holders to Canada may become a less favoured option than it was in the past.

Ontario is relatively competitive with a number of other jurisdictions in producing undergraduate engineers, although there are signs that this may not continue to be the case and that the province may not be able to rely on youth to fill the demand. The educational pipeline for producing scientists and engineers begins in elementary school and culminates in the undergraduate and graduate departments of universities. The desire and capability to pursue science and engineering at university are thus determined long before students enter university. But too many students are turned off math and science long before they reach the university level. The declining interest in and quality of math and science programs identified earlier in this section therefore exacerbate the problems in the long run of providing the university graduates of the future.

These problems are already evident in university enrolments. During the 1980s, there was a waning interest in the math, science and engineering programs offered by Ontario universities. The percentage of students who showed math, science or engineering as their first choice on their university applications fell from 31 percent to 24 percent between 1983 and 1988. The

absolute number of first choice applications to these programs has also decreased (See Exhibit I.21).

This declining interest is also reflected in the enrolment in these programs. While university enrolment increased 20 percent from 1980 to 1987, the proportion of students enrolled in engineering, math and physical sciences fell from 18 percent to 15 percent. Over the last five years, the ratio of applicants to places available in engineering has also decreased somewhat. In 1984, there were five applicants for every place available in engineering programs at Ontario universities. By 1988, the number of applicants per place available had declined to 4.5 (See Exhibit I.22).

There is also some evidence that fewer of the students with the highest grades are applying to these programs. Over the same period, cut-off grades for acceptance into engineering decreased at five universities, and no universities raised the cut-off grade level. It should be noted, however, that several universities are now considering factors other than grades when making acceptance decisions. Broader admission criteria could explain lower cut-offs without necessarily implying that less qualified students have been admitted. Students' grades usually drop by 10-20 grade points between high school and university, and an estimated 15 percent of Ontario scholars enrolled in science programs fail in the first year, both points suggesting that there is reason to be concerned about the preparation of incoming students.

Declining enrolments in math, science and engineering may not only reflect poor preparation in elementary and secondary school, it may also reflect the structures of the programs and the opportunities available after graduation. As mentioned earlier, women have accounted for the overwhelming majority of the increase in university enrolments but most have not selected programs in math, science and engineering. The situation is, if anything, deteriorating. Although the number of women enrolled in these programs has increased over the past 15 years, it has not gone up in recent years. Part of the problem undoubtedly lies in early schooling, but some must be attributed to the university programs themselves.

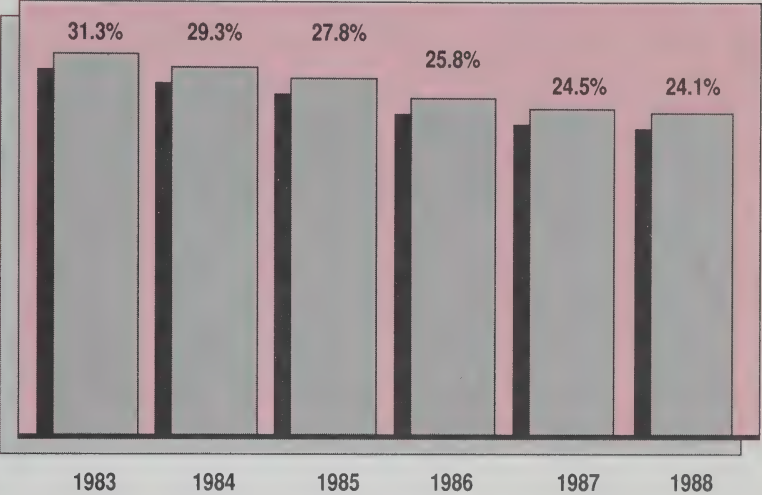
Universities and scientific organizations such as the Natural Science and Engineering Research Council have made efforts to increase women's interest in science through targeted recruiting, faculty role models, scholarships and grants, but with only limited success. More successful have been experiments designed to alter the structure of teaching. Following a model developed by Potsdam College in New York State, a teacher involved in York University's Center for the Support of Teaching has introduced strategies into her classes that have allowed women students to overcome their math anxiety. Recognizing that learning to think mathematically takes time, practice, challenge and encouragement, she rarely lectures. Instead, she invites students to the blackboard to review work as a group, so that the steps involved in finding a solution can be shared with the entire class. Students are presented with mathematical theorems and invited to prove how these are true. "I want to encourage them to take responsibility for their own learning," she says, "instead of just providing them with a problem to which they can find applicable answers".¹⁵

Both male and female students may be frightened away from these programs by the often rigid course requirements and the

¹⁵ Julia Weston, "Girls as Capable as Boys in Math ...," *University Affairs*, November 1989, p.6, (quoting Professor Patricia Rogers).

EXHIBIT I.21

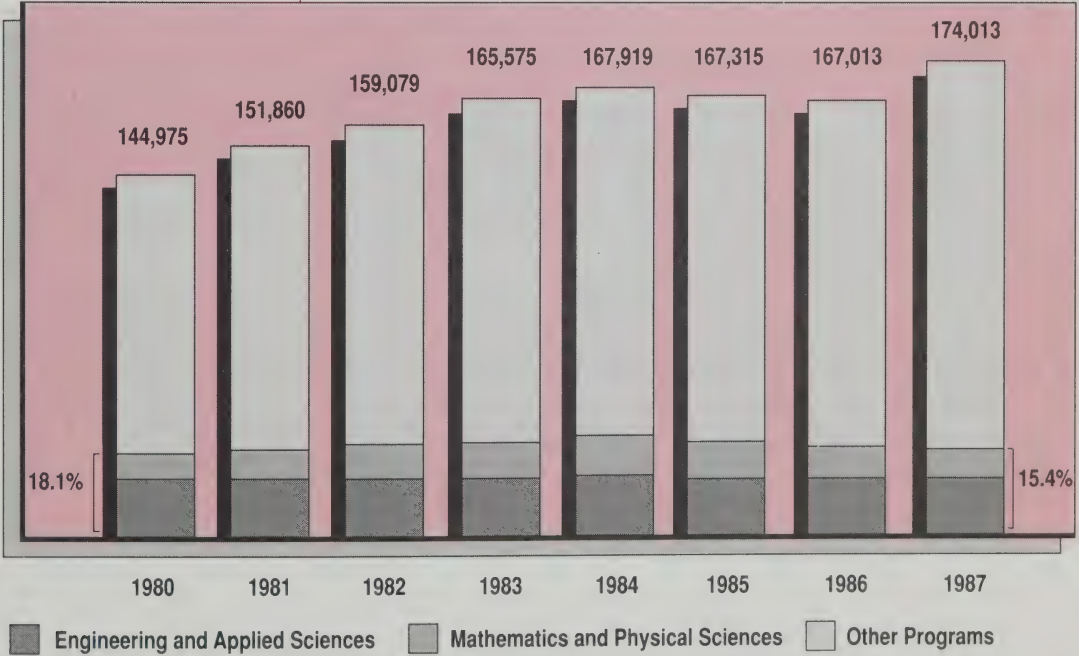
First Choice Applications to Science, Engineering and Math Programs as a Percentage of Total First Choice Applications at Ontario Universities, 1983-88



Source: Ontario University Application Centre, *September [final] Report*, 1988

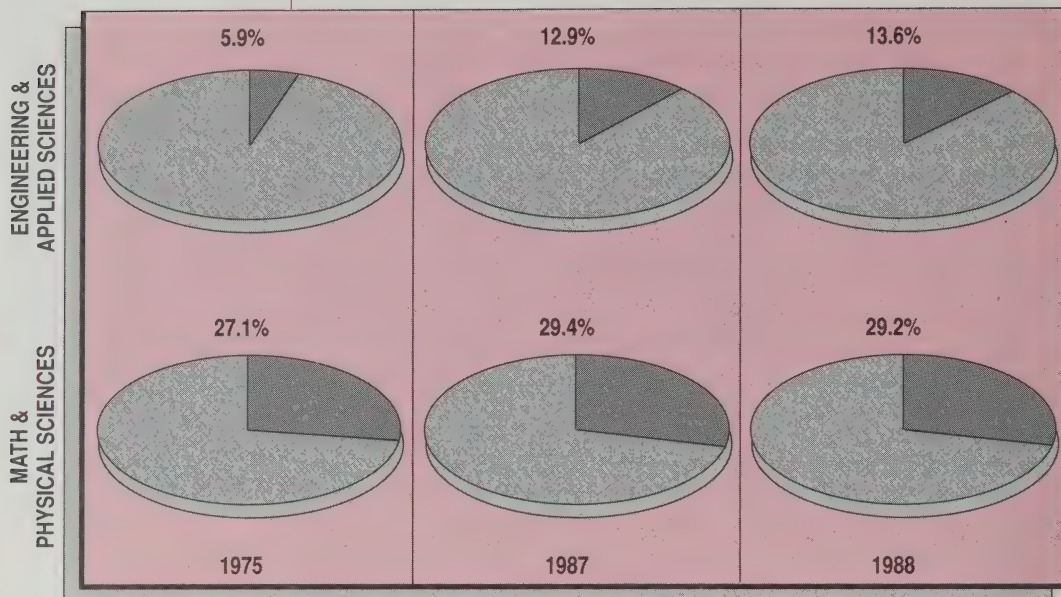
EXHIBIT I.22

Full-Time Undergraduate Enrolment at Ontario Universities, Fall of 1980-87



Source: University Relations Branch, Ministry of Colleges and Universities, February, 1989.

Percentage Full-time Female Undergraduate Enrolment within Field of Study, 1975, 1987 and 1988



Source: Council of Ontario Universities, *Attracting and Retaining Women Students for Science and Engineering: A Report from the Committee on the Status of Women in Ontario Universities*, June, 1988 and Ministry of Colleges and Universities, June, 1989.

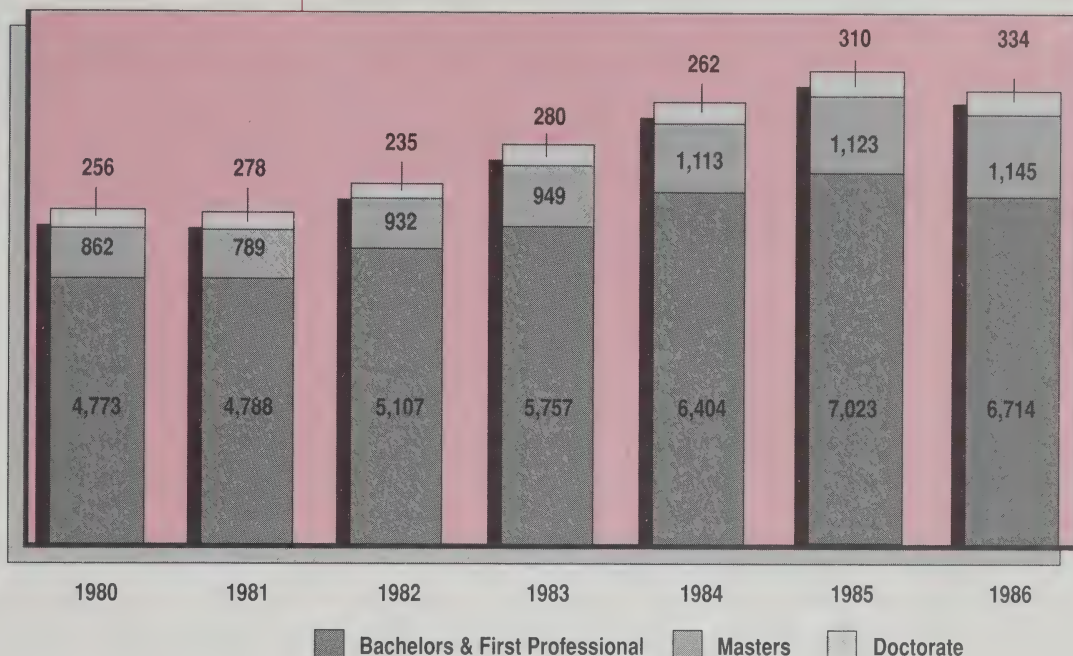
heavy time demands. Most high school students have never been exposed to what the work of an engineer entails, yet are expected to commit to four years of education and a career in a specific engineering discipline when applying to an engineering program. More foundation courses, more possibilities for transfers within the university and more flexibility within the program would help overcome some of these problems, as would more information on career prospects for graduates in mathematics, science and engineering.

However, some students may be only too aware of the available job prospects. They may choose courses in law, medicine and journalism because they are seen to be more exciting, to allow for greater independence and because they lead more quickly to high financial rewards. Perhaps as firms restructure to increase participation and team work, to encourage more innovation and mobility, the jobs available to math, science and engineering graduates may become more attractive.

The quality of the teaching equipment used to provide science and engineering education is critical. Time spent in labs provides an opportunity to test and understand more completely the theories that are introduced in lectures and textbooks. As the pace of technological change quickens, so too does the introduction of new equipment. It is increasingly difficult for universities to finance the upgrades in equipment and facilities required for high quality teaching. Rapidly changing technology and limited funding mean that teaching equipment at Ontario's universities is fast becoming obsolete. While many universities have sought private funding for equipment, they are finding that industry donors prefer to direct their generosity towards specific research, not undergraduate teaching equipment. Many faculty worry that obsolete teaching equipment will in time undermine the quality of education that science, mathematics and engineering

EXHIBIT I.24

Degrees Granted in Math, Sciences and Engineering by Universities and Ryerson Polytechnical Institute, 1980-86



Source: Ministry of Colleges and Universities, 1989.

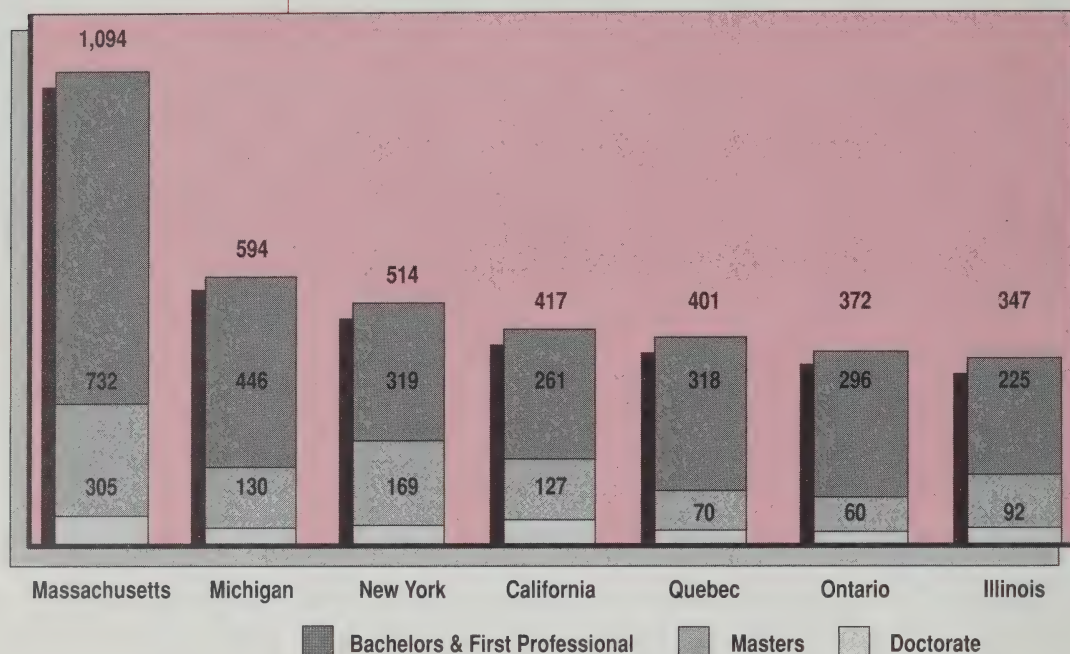
graduates receive.

Few of the more than 130 Ontario firms interviewed in the course of the Premier's Council research were concerned about the technical capability of university graduates. There is, however, a growing concern about whether or not there will be enough graduates available in the future and about the communication skills of those currently graduating in science and engineering. This speaks to the need for Ontario to graduate more scientists and engineers who have the range of skills necessary for the challenges of the new global economy.

THE DEMAND FOR GRADUATE DEGREES

The emerging supply picture of undergraduate students in engineering and science has additional consequences for both the university and the economy. Declines in undergraduate enrolments mean that there is a smaller pool from which masters and doctoral candidates can be drawn. Relative to a number of other jurisdictions, Ontario graduates the smallest proportion of engineers at the masters level and is close to the bottom in terms of graduating engineers with doctorates. Yet, demands for advanced degree holders from both industry and the universities can be expected to grow (See Exhibits I.24 and I.25).

In the next decade, over 20 percent of the faculty in Ontario's universities will retire, creating possible problems in all areas of study. But it will create particular problems in engineering, math and science because universities will more frequently be in direct competition with industry in the search for top scientific and engineering talent. Companies are aggressively competing for Ph.D.s in a number of fields and are increasingly looking for graduates at the masters level as the demand for highly educated personnel grows. Wage competition is resulting and industry has the advantage.



Source: Ministry of Colleges and Universities, July 1989. (Derived from MCU data and data in *Engineering Education*, March, 1989).

Indeed, the wages offered in industry may attract students before they even reach the graduate level. Industry is offering goods jobs and salaries to students with undergraduate degrees, especially in comparison to the financial support offered to graduate students by the universities. In 1989, the industry median starting salary for an undergraduate engineer was \$31,000, while universities were offering students approximately \$15,000. Moreover, most graduate students have to work as teaching assistants or research assistants in order to receive even these modest sums. U.S. universities offer better scholarships and lighter teaching loads.

Foreign universities may also compete aggressively both for graduate students and for potential faculty. The consequences of these competitive trends may be a reduction in both the quality and quantity of faculty available, thus threatening ultimately the education of future scientists and engineers. To counter this threat, more financial assistance must be allocated to graduate students in these fields, though this funding should not be at the expense of graduate students in other fields who now must work with similarly limited support.

RECOMMENDATION 16:

Incentives for Post-Graduate Studies in Science and Engineering

Incentives to encourage the pursuit of post-graduate studies in science and engineering should be provided through:

- The provision of special grants and stipends for post-graduate students;
- The creation of opportunities for direct entry from a bachelor degree to a four-year doctoral program.

ENSURING CONTINUITY ACROSS THE SYSTEM

*Our present education system is an archipelago, with universities constituting one island, high schools another, primary and elementary schools another, and community colleges yet another. The ferry service between these islands is infrequent and unpredictable. What we shall need for the 21st century...is a series of fixed links between the islands in order to mobilize and coordinate all of our considerable educational resources in the interests of the people and the society we serve...*¹⁶

79

These remarks by a Canadian university president underline the fact that, traditionally, the linkages among the components of Ontario's educational system have not been very strong. This lack of coordination takes a toll on students seeking credit for skills and knowledge gained in one institution, yet not recognized by another institution within the system. It is a rigid, restrictive system that diminishes the possibility that students in the end will have the chance to pursue those options that best realize their goals and promise.

Some encouraging signs of reform are beginning to appear in new articulation arrangements. 'Articulation' is the current academic catchword to describe the processes by which students' programs in one type of institution prepare them for entry into designated programs at another type of institution, their schedules and the sequencing of their courses are coordinated when they are concurrently enrolled in programs at both types, and the credits they earn at one type are appropriately acknowledged at the other.

The transition from secondary school to either university or college has been relatively well managed at a formal level, but high dropout rates for new post-secondary students indicate that more could be done to ease the move for students. In the last few years, colleges and schools have begun to explore ways to smooth the transition from school to post-secondary institutions.

The transition from college to university is much more difficult. Indeed, the colleges were initially designed to provide post-secondary programs of a 'terminal nature', programs that led directly to employment rather than to further education. Although college graduates are more frequently being admitted to universities, cases are usually decided on an individual basis

¹⁶ James Downey (University of New Brunswick president), quoted in Peter Stokes, "College Transfer Revisited: A Working Paper," in *Colleges and the Educational Spectrum: Background Papers on Colleges and Universities*, Toronto: Ontario Council of Regents, 1989, p. i.

and students often receive minimal or no credit for work already completed. However, it is becoming more common for students with college diplomas to receive some advanced standing in university, and some universities and colleges have developed joint programs that allow each institution to do what it does best and give the graduate both a diploma and a degree.

Restrictions not only apply to movement from college to university. The rigidities of the system often make it virtually impossible to switch from one program to another within institutions, or to switch from college to college, or from university to university, without losing a great deal of credit for work already done.

The transition from years at home or in the labour force to either kind of post-secondary institution is the most difficult for students. Their experience and knowledge are too often dismissed and regarded as irrelevant to the formal education system. Some universities are experimenting with giving credit for other experience. McMaster University's medical school, for example, has moved to a more flexible set of criteria for entry, one that recognizes many of the skills people have gained elsewhere.

It is also difficult to move from country to country without losing credentials earned in another system. Immigrants frequently encounter a very uneven recognition of their degrees and diplomas. Consequently, their skills are often lost to themselves, to employers and to the community, as has been thoroughly documented in *Access!*, the 1989 report of the Task Force on Access to Professions and Trades in Ontario.

It is time to rethink the rigidities still built into the post-secondary education system. Each step along the educational pathway should open doors rather than close them. Thus, individuals should be able to transfer smoothly from one institution to another without having to go back to 'square one' to regain their accreditation. Ideally, the competencies an individual has achieved in one environment should be recognized in others if learning is to be acknowledged as cumulative. And finally, no educational choice should be a dead end.

RECOMMENDATION 17: **Ensuring Continuity and Transferability** **Across the Education System**

Transferability and continuity across the education system should be ensured through the following measures:

- *A coordinating council for transferability and continuity should be established to deal with system issues such as admissions requirements, programs standards, degree requirements and transfer of credits. This council should include representation from schools, colleges, universities, community groups, government and both employers and unions from the private sector.*
- *Transferability within the college system should be promoted through the establishment of program standards and equivalencies which recognize credits earned at other institutions*
- *Transfer arrangements between the college system and the university system should be established to allow for smooth transition and advanced standing in either direction: college to university or university to college. Program standards and, where needed, transition programs should be developed to facilitate the transfer.*

RECOGNIZING THE GLOBAL VILLAGE

81

As the Massachusetts Institute of Technology's recent report on industrial productivity observed, "The winds of change that are sweeping through industry and the economy will not spare institutions of higher learning."¹⁷ Increasingly, as Ontario industry operates in a global marketplace it will confront different cultures, languages and ways of doing business.

While Council has not examined the international content of programs at Ontario's post-secondary and secondary institutions, it is clear that much of Ontario's focus and perspective is national or perhaps North American at best. For those who will be exploring new markets and developing new products for export, a global perspective will be critical. Council believes that university and college programs in management, engineering and science should attempt to place these studies in an international context and that attention to global issues and best practice in other countries should be emphasized. Furthermore, students at all levels and in all disciplines should be encouraged to learn and master foreign languages and develop a broader understanding of foreign cultures.

RECOMMENDATION 18: **Towards an International Education**

In the interests of turning out more worldly, well-rounded and culturally aware graduates, Ontario should strive to offer its students an international education which might include:

- *Expansion of existing student exchange programs to offer more students opportunities to learn the language and culture of other nations;*
- *Company-sponsored exchange and language development scholarship programs;*
- *An international senior leadership program comparable in structure (though not in content) to the National Defense College's highly respected international program.*

For Ontario to be competitive in the global economy, it must have individuals with the breadth and ability to create and innovate. The Council believes that refocused effort and investment on the part of Ontario's institutions can enhance their role in the development of higher value-added skills and higher-achieving people. Accomplishing this change will require drive and commitment and new levels of cooperation among institutions, industry, government and labour.

¹⁷ Dertouzos, Lester and Solow, *Made in America: Regaining the Productive Edge*, The MIT Commission on Industrial Productivity, 1989.

A specialist is only as good as his generalist skills allow him to be. JAPANESE MANAGER

ADDRESSING THE TRAINING DEFICIT

83

THE TRAINING IMPERATIVE

The improvements to Ontario's education system recommended in the previous chapter are designed to enhance the foundation skills of Ontario's future workforce. But education is only the beginning of a process of lifelong learning for the individual. Training is the continuation of that learning process beyond the school years and into the workplace. Improving education will yield long-term returns for the province and its people but changes in our training commitment will bring more immediate benefits. Together, education and training are fundamental and complementary building blocks for the future of Ontario.

In developing its position on training, the Council was guided by four framework ideas:

1. The choice open to Ontario is not whether to restructure its economy, but rather which restructuring path to follow. The distribution of income from employment is becoming more unequal, not less so. These trends must be arrested and reversed. Labour market and human resource development policies are key policy levers in making this choice. The policy framework at both the federal and provincial levels falls far short of what is required.
2. Our current investment in training incumbent workers is seriously inadequate. We refer to this training failure as the training deficit. To close the training deficit, we will require both a new institutional framework for training policy and a substantial increase in investment in skills development.
3. Training, work organization and individual opportunity are inextricably tied together. This is because every training strategy, at least in part, is about work organization — that is to say, about how jobs are done and how they are remunerated. For Ontario to close the training deficit, we must recognize that what is involved is a new social bargain.

TRAINING FOR THE NEW GLOBAL ECONOMY

For this reason, we believe that employers, employees and their respective organizations should have equal voice in the formulation of Ontario's strategy to close the training deficit.

4. Training policy is part of a broader commitment to equity. Training policy must therefore be allied to specific policies to remove obstacles and promote access.

In preparing its position on training, the Council has been mindful that training has many purposes. Viewed from the standpoint of international competitiveness, training is the means by which the skills of our workforce are upgraded to enable us to succeed in global markets. Viewed from the standpoint of our social values and concerns about fairness, training is a vehicle for providing all workers with an equal opportunity to obtain meaningful and well-paying jobs. Viewed from the standpoint of an individual worker, training is a springboard for improving one's life chances. Each of these views suggests a different rationale for training. The following discussion of the training issue is therefore cognizant of the many reasons and needs for training.

The industrial restructuring challenge facing Ontario over the next decade will require massive shifts of capital and human resources to higher value-added per employee activities in all sectors of the economy. These shifts cannot be accomplished without a substantial increase in the level and quality of workplace training in the province. Higher value-added products generally require more skill in their creation, production and distribution. Ontario's workforce will need to acquire those additional skills to reap the high wage rewards that can accompany the high value-added economy.

The Council's research found that many employers, employees, industry associations and trade unions alike recognize the significant shift in skills and training that will be required. These organizations, both private and public sector, have found that higher productivity and better quality goods and services cannot be delivered through the adoption of new technologies alone. They have discovered that, without corresponding changes in the skills of their employees and the organization of work, new technologies do not necessarily result in major increases in productivity or quality. Organizations which have introduced flatter management structures and asked their workforces to participate more fully in operational decisions have also found that major training efforts are required to give workers the skills to participate effectively. In fact, one would be hard-pressed to find any organization of size in the province which does not recognize that a major increase in training and skills upgrading is required if Ontario is to be successful in the new global economy.

Given this higher skills and training imperative, it is alarming that the evidence indicates Ontario is suffering from a serious training deficit. By their own admission, many organizations are not spending adequately on training or providing enough of it. These low spending and activity levels are confirmed by international comparisons, where Canada appears to lag behind major competing nations in its level of workplace training.

Moreover, many firms, trade unions and individual workers report an unevenness in the quality of training available. The training culture in Ontario is not highly developed. Firms that want to provide high quality training find the private training

industry difficult to decipher and of varying effectiveness. The public training infrastructure in colleges and other institutions may be more accessible in some ways, but the effectiveness and responsiveness of courses to demand varies widely from one institution to the next.

There is widespread concern in Ontario that the level and quality of training we have is not adequate to the restructuring and skills challenges we face. However, the solution to the problem is not simply one of increased government funding, nor does it lie in exhorting industry to spend more on training. Our current approach to training is yielding mixed results for a number of reasons which will be explored in detail later, but can be described here briefly as follows:

The “Free-Rider” Problem

Employers who train their people effectively have no assurance that they will recapture that investment. Employees may leave at any time for another employer — even a competitor. Thus, companies that do not train may profit from those that do by hiring skilled workers trained elsewhere. While an individual firm cannot capture a substantial part of the benefits of training its workforce, the province as a whole benefits from worker training, even when workers change jobs (unless they leave Ontario). Solving the “free rider” problem is thus essential as an incentive for reducing the training deficit in Ontario.

The Generic Skills Gap

With the advent of new information-based technologies and the shift to a more flexible and multiskilled workforce, employers are finding that generic workplace skills are becoming increasingly important relative to job-specific skills. Generic skills are those which workers can use in many jobs. They include analytical, problem solving, workplace interpersonal skills and broad technical skills that may be found in the skilled trades or in the operation of personal computers.

Traditionally, employers have taken responsibility for job-specific training, but have relied on the public training and education system for most generic skills training. With the sharp increase in generic skills training requirements, employers have been reluctant to move quickly to increase such training and public institutions have found it difficult to anticipate and respond to the demand.

Uneven Quality

The market for training services is highly fragmented and populated by hundreds of public and private suppliers. There is little good information available on the relative quality and effectiveness of different providers of training. Employers have not acted to address the information problem by cooperatively monitoring and disseminating market intelligence or by certification processes which could ensure minimum standards.

Industrial Relations Differences

Training is an issue that goes to the heart of labour-management relations. Training is thoroughly bound up with issues of who does what jobs and how they are done. In unionized workplaces, training strategies inevitably have to be developed through labour-management negotiations. In many Canadian industries,

TRAINING FOR EQUITY

differences between labour and management over the objectives, focus and funding of training have sometimes precluded the development of effective training efforts. In non-unionized workplaces, lack of employer-employee consultation around the development of training programs can result in poorly executed training strategies.

These four problems are endemic to our current training system and are unlikely to disappear without radical structural change. Given the risks in recovering their investment in training, the uncertainties surrounding training quality and the industrial relations environment, it is perhaps no surprise that companies train less than they think they should.

Our workplace training system as it stands today delivers an inadequate training effort. To be sure, there are bright spots of individual performance in some organizations, but the status quo is not working well enough.

Training is not just an economic issue; it is fundamentally a social equity issue as well. From the vantage point of business or the economy as a whole, training is about increasing international competitiveness and raising the value-added per employee in Ontario. From the worker's perspective, training is about enhancing one's career life chances and economic returns; it is integrally connected to issues of opportunity and personal advancement. This dual context of training is central to the Council's view of the training challenges in the province. An Ontario training strategy must address both the pressing need to improve the province's economic competitiveness, while at the same time increasing the opportunities for all the province's citizens to improve their financial standing and quality of life. Training must therefore address the wealth creation challenge at both the general and individual levels.

The effectiveness with which an Ontario training strategy can be implemented will depend on how the burdens and benefits of economic restructuring are shared within the province. The restructuring process will strongly alter the earning potential and life chances of most of the province's citizens. Restructuring, by its very nature, transforms the demand for skills and capabilities in all sectors of the economy. Those with skills in less demand will face the most difficult adjustment and they may very well face a significant decline in their quality of life. Yet those with skills in high demand may enjoy a substantial improvement in their life chances.

Evidence gathered by the Economic Council of Canada suggests that our society is at risk of increased polarization with marked disparities between good and bad jobs emerging.¹ An effective training strategy can be a means of reducing the polarization between high-wage and low-wage jobs. Training represents our best tool to ensure that problems of illiteracy are overcome and that the employment disadvantaged are guaranteed an equal opportunity to participate in a higher value-added economy. An equitable training strategy is a prerequisite to the pursuit of higher value-added restructuring advocated in the Council's first report.

Training opportunities must be available to the employment

¹ Economic Council of Canada, *Good Jobs, Bad Jobs: Employment in the Service Economy*. Supply and Services Canada, 1990.

disadvantaged, including social assistance recipients and the long-term unemployed. The Premier's Council recognizes that these groups represent a special category of training needs. Although the groups which make up this category are quite different in their background and requirements, they share two characteristics: they have had limited employment success and their training needs are likely to necessitate additional support, often to accommodate longer periods of adjustment and counselling in basic skills. A substantial portion of public funding, particularly at the federal level, has been targeted towards helping individuals in this group. Ironically, however, these programs have had limited success in achieving their goals. The existing program structure suffers from a variety of shortcomings that will be documented in the review of government training policies later in this section.

Policy in this area is in need of a radical break with the past if we are to achieve more effective results. Overcoming the obstacles presently faced by the employment disadvantaged and facilitating their effective integration into the workforce constitutes one of the greatest challenges we face. Our success in meeting this challenge will determine the extent to which the benefits of an expanding and dynamic economy are shared by all members of our society.

The current training and skills deficit cannot be addressed independently of the existing industrial relations system in this province. Questions of training and work reorganization at the level of the enterprise are closely tied to questions of job definition, job classifications and the determination of pay scales. As noted earlier, it is unrealistic and impractical to devise an effective training strategy without taking these factors into account. A new provincial training strategy must recognize and incorporate the central role played by the principal labour market parties — management and labour.

The process of defining and acquiring skills lies at the heart of any industrial relations system. Nothing is more central to workers' conceptions of their worth than their skills. Their skill levels determine the degree of bargaining power that they can exercise in the labour market. For management, increased flexibility in the deployment of skills in the work process is the key to their competitive strategies. Within the prevailing industrial relations system, much of the organizational energies of management and labour have been directed towards negotiating the definition of and compensation for skills.

The industrial relations system that has evolved in North America over the past four decades relied heavily on the operation of "internal labour markets" — that is, those within firms. These were characterized by a high degree of inflexibility in job content, allocation of labour and pay scales. The strict work rules governing these issues provided protection for both the pay and job security of senior workers. The operation of these internal labour markets also created a stable system for skill acquisition and ensured the continuing motivation of the existing workforce.

The adoption of new technologies and the consequent demand for skill upgrading and more flexible forms of work organization may be profoundly unsettling for the operation of these labour markets, given their reliance on existing job and skill definitions that workers have struggled long to obtain. Mistrust of new approaches to the deployment of skills or the organization of work is often the result. Decisions about training, about how skills

are developed and deployed within the firm or what forms of work organization are adopted must therefore be viewed within the context of the balance of power prevailing in the industrial relations system.

Management's Perspective

For management, the issue of skill shortages is rapidly assuming greater importance. Employer after employer interviewed in the course of the Premier's Council research saw a competent workforce as critical to their ability to meet the challenges of the new global economy. Yet the pursuit of a trained and flexible workforce, according to many of them, often proved to be an exercise in frustration.

A combination of factors is inhibiting industry's ability to find and retain adequately skilled workers. The diminishing pool of first-time entrants to the labour force is limiting the supply of new workers. Of those who are entering the labour force, an insufficient number appear to possess sufficient entry skills, whether graduating from high schools or technology-related education programs. Industry, even by its own account, is suffering from chronic under-investment in training. Finally, government efforts to solve these problems seem to miss the mark much of the time.

For many companies, skills and training are inseparable from emerging concepts of flexibility. If a well-educated and skilled labour force is a prerequisite for global competition, then its flexible deployment is the means by which competitive advantage can be achieved. The development of new corporate strategies requires flexibility on a number of fronts. At the simplest and most fundamental level, companies are finding that productivity and quality can be enhanced when workers have many sets of skills that can be put to different applications. This trend, called multiskilling, allows more flexible deployment of workers in a variety of jobs. In workplaces practising the team-based approach to production, it allows workers to rotate jobs and spell one another more easily during breaks. Hand-in-hand with multiskilling go efforts to involve all of the workforce in quality control and production problem solving and to give them the tools to carry out these functions effectively. This in turn requires far greater depth and breadth in individual skills.

Most employers have traditionally focused their training efforts on job-specific skills, where much of the training occurs on-the-job and relies upon in-house trainers. Increasingly, however, companies are training workers to respond to the operating requirements of more general technologies and providing them with training in the organizational culture desired by the company. Training in interpersonal, communications and analytical skills is viewed as essential in these organizational and cultural contexts. Among the majority of private employers, however, the focus is still on skills training which builds the competitive capabilities of the enterprise. To this end all training, job-specific and generic, is provided as competitive needs dictate.

Labour's Perspective

Despite the growing consensus on the need for more training, there remain differences between a business-centred and a worker-centred approach to training. In contrast to management's emphasis on the need for a multiskilled and more flexible workforce to keep Ontario internationally competitive, labour views training as a

means of enhancing the individual worker's life prospects and sense of control. Labour sees training as a basic right, much like education. Indeed, skills training should incorporate the best practices of good adult education. It must equip workers to have more control over their jobs and their work lives by building on their existing capabilities. In so doing, it should prepare them for what they need to know now and in the future and put them in a better position to shape that future.

Labour emphasizes the importance of several general guidelines for good training. The first is that skills training must be developmental. It must teach skills in a way that goes beyond a particular task, job or work area. The content has to point beyond the immediate object of the training. In other words, the training must be generic in nature, teaching workers something about the general type of equipment involved and the underlying principles. In so doing, it must lay the basis for future training and expand the range of technological and occupational choices open to the worker.

Second, skills training must be designed to raise the skill level of the entire workforce. It must flow from a worker-based identification of needs and not be restricted to narrowly defined job performance factors.

Labour also believes that skills training must support the development of good job design and technology that enhances the skills of workers. In other words, it must equip the trainees to have more control over their work and incorporate information that helps them work safely.

In addition, skills training must be open to all. Special efforts must be made to improve the degree of accessibility to training, particularly for the employment disadvantaged.

Labour believes that the broad, general approach to training best serves the needs of individual workers and the provincial economy as a whole. By providing workers with a more solid foundation to acquire new skills and to move to different and better jobs in a period of economic restructuring, it enhances labour's collective sense of social well-being. Such an approach to training enables people to take more control over their working lives and provides a solid foundation for an economy based on high quality jobs, not dead-end ones.

TOWARDS A NEW APPROACH TO TRAINING

Appeals to management to invest more aggressively in higher levels of training are unlikely to succeed unless that investment is clearly perceived to deliver economic benefits. Similarly, appeals to workers to embrace a "new training culture" on the basis of "good industrial citizenship" will likely prove unconvincing if no personal or collective benefit to the workforce will result. Ultimately, the full cooperation of the provincial workforce in the implementation of new training strategies will succeed only if it is viewed as clearly in their interests. That cooperation can only be secured with the assurance that a new provincial training strategy will recognize the central role of both labour market parties in decisions about the design and delivery of the training.

Despite the differences in labour and management perspectives outlined above, there are solid grounds for optimism about the prospects for such cooperation. A survey recently released by the Canadian Labour Market and Productivity Centre reported that 60 percent of business leaders and 81 percent of labour leaders feel that it is critical for the two sides to work together to improve training in the workplace. The survey further indicated that

substantial majorities of both the business and labour communities want employers to be directly involved in providing training and feel that unions should have a direct role as well.

To develop a workable training strategy in Ontario, it is essential to have the primary labour market parties, management and labour, setting the direction and ultimately taking responsibility for making it happen. To that end, the Council will propose that the workplace training strategy in Ontario should be directed by a bipartite Ontario Training and Adjustment Board (OTAB) made up of management and labour representatives. All workplace training programs currently administered by the province would be brought under the direction of the OTAB. Thus, the OTAB would have the mandate to develop Ontario's strategy for training for the new global economy. Government would continue to have direct responsibility for training for equity purposes. Training aimed at assisting the employment disadvantaged would also continue to be provided directly by government and public institutions, and therefore would not fall under this body.

The mandate of the OTAB would be to foster a new approach to training in the province by meeting a number of specific objectives:

- Build a cooperative labour-management environment around training and adjustment in the province;
- Foster the creation of bipartite sectorally-based training funds which can help solve the "free rider" problem and substantially increase the level of workplace training;
- Substantially increase the supply and quality of generic workplace skills training, especially through reform of the floundering apprenticeship system;
- Create a demand-driven training system that can raise the quality and effectiveness of the training supply;
- Provide maximum flexibility in the delivery of training programs to suit differing sectoral and regional needs in the province, including the special needs of small business;
- Link training closely with adjustment so that both areas are seen as integral parts of a single post-education skills strategy;
- Shift workplace training in the province away from an ad hoc approach supported by a complex system of government grantsmanship to a coherent and strategic training culture which focuses on the real training requirements of the new global economy.

The next part of this section will describe the workplace training situation and elaborate upon the reasons why existing efforts are insufficient. A description of the role of Ontario and federal government training programs and some of their shortcomings follows. Also described are the problems of the apprenticeship system, which represents a combined government and industry failure to deal with the skilled trades issue. Following the apprenticeship discussion is a comparison of the Ontario and Canadian training practices with that of other countries to determine how other jurisdictions have handled similar workplace training issues, with greater success in some cases. The section ends with the discussion of the structure, functions and responsibilities of the OTAB with respect to training. Its role in terms of the adjustment process will be examined in Section III of this report.

TRAINING IN INDUSTRY

91

Despite the widespread recognition that the process of restructuring requires a new approach to training, companies have been slow to make the necessary changes. While some firms genuinely regard the education and training of their workforce as the key to continuing competitiveness, many pay only lip service to the importance of human resource development.

In order to gauge the level of training among Ontario companies, the Premier's Council commissioned an extensive study of training in industry, interviewing 136 companies in the manufacturing and service sectors across the province. The results present a varied picture. On the one hand, the aggregate findings offer evidence of a serious deficit in skills training. On the other hand, there were signs that industry is changing the way it responds to training issues.

Despite some indications of a shift in their approach to training, companies investing seriously in training were the exception in the survey rather than the rule. The overall amount of training in industry today falls far short of the perceived need. Most companies interviewed had either only recently begun to intensify their training effort or were just starting to feel the pressure to do so. Others who have already made significant commitments still felt their efforts were falling short. They were closely watching the effects of the increased training commitment on the part of industry leaders, as well as monitoring the results of their own training investments. The single most powerful reason cited by individual firms for increased training was the ability to see tangible results from the investment.

THE INVESTMENT IN TRAINING

While reliable comparative statistics on training investment are notoriously hard to come by, most evidence indicates that spending on training by Canadian industry is considerably lower than comparable spending in other countries. Preliminary data from the 1987 Statistics Canada Survey of Human Resource Development and Training shows that employers in Canada spent about \$1.4 billion — less than .3 percent of Gross Domestic Product — on formal training that year.² This represents a little over \$100 per worker employed. A number of studies in the U.S. estimate formal industry training expenditures at levels more than twice the Canadian effort.³ For example, the American Society

² Employment and Immigration Canada, *Success in the Works: A Profile of Canada's Emerging Workforce*, Ottawa, 1989.

³ Commission on Workforce Quality and Labour Market Efficiency, *Investing in People*, 1989. (See especially papers 7a, 7b and 7c on private sector training in Volume 1 of Background Papers).

of Training and Development estimated national average per employee training expenditures in industry at U.S. \$238 in 1984.

In West Germany, where a highly developed and largely industry funded apprenticeship system trains about 60 percent of all school leavers, companies spend a far greater amount on training than do their Canadian counterparts. All told, industry expenditures in Germany on apprenticeship and related vocational training came to about 1.2 percent of GNP in 1980 on a net cost basis (that is, after deducting the value of output generated by apprentices).⁴ This spending is about four times the above-cited Canadian level of formal training expenditures in 1987. About 28 percent of German vocational training expenditures (equal to .3 percent of German GNP) is dedicated to continuing training for older workers long past their apprenticeship training. Thus, German industry in 1980 spent about as much proportionately on formal vocational training for older employed workers as Canadian firms spent in 1987 on formal training for all workers.

Comparing Canadian training efforts with those of Japanese industry is difficult because workplace training in Japan is so deeply embedded in the corporate culture and is provided continuously on-the-job. Although specific comparisons of training levels cannot be made, case study research done in Japan for the Premier's Council indicates a much higher level of training in Japanese firms than in comparable Canadian firms. As Exhibit II.1 illustrates, a typical Japanese auto parts company provides more workplace training than even an innovative Canadian auto parts firm offers and substantially more than the typical Canadian company provides. The impressions from these case studies were confirmed in interviews with leading Canadian companies in several industries who described their Japanese competition as investing more heavily in workplace training than they did.

The 1987 Statistics Canada survey cited earlier reported that less than one quarter of firms in Canada spend money on formally training their employees. Studies conducted for the Ontario Ministry of Skills Development reinforce this finding and indicate that the likelihood of a company having formal training programs increases dramatically with company size (See Exhibit II.2). The evidence collected by the Ministry further indicates that training tends to be piecemeal, uncoordinated and poorly planned, even among those firms which do provide it. Although the volume of employer-sponsored training has increased in recent years, this relates more to economic growth rather than the development of a training culture within firms. Moreover, the report of the Federal Government's Advisory Council on Adjustment indicates that in those firms which do offer training, it is directed disproportionately to employees who already have above-average education and pay.⁵

⁴ Institute of Manpower Studies, *Competence and Competition: Training and Education in the Federal Republic of Germany, the United States and Japan*, U.K.: National Economic Development Office, 1984.

⁵ Advisory Council on Adjustment, *Adjusting to Win*, Ottawa: Supply and Services Canada, 1989.

EXHIBIT II.1

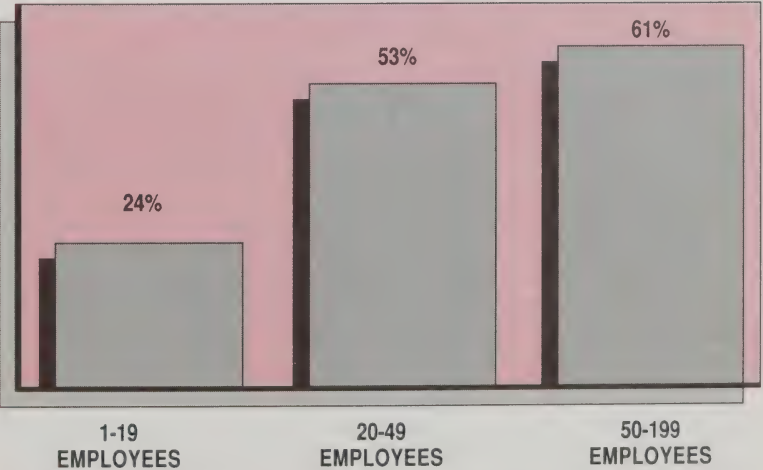
Comparison of Training in Japanese and Canadian Automotive Parts Industry

POSITION	LARGE JAPANESE AUTO PARTS FIRMS	INNOVATIVE LARGE CANADIAN AUTO PARTS FIRM	TYPICAL LARGE CANADIAN AUTO PARTS FIRM
Entry Level (one time)	<ul style="list-style-type: none">• Orientation (2 weeks)• Training on-the-job (1 month with job rotations)• Team work training	<ul style="list-style-type: none">• Orientation (2 weeks)• 6 days on-the-job training with rotation• Introduce team work concern and quality	<ul style="list-style-type: none">• Orientation, including quality control (1 day)• On-the-job with co-worker assistance
Skilled Production Training (Annual Level)	<ul style="list-style-type: none">• Technical training (varies)• Total quality control (2.5 days)• Quality circle training (5-10 days)• Inspector/Assembler training (varies)• Specialized skills (varies)• On-the-job delivered by lead hands	<ul style="list-style-type: none">• Team building (5 days)• External training for skilled trades and technicians (as needed)• Informal on-the-job training delivered by co-worker (not in job description)• Statistical process control (1-2 days)	<ul style="list-style-type: none">• External training for skilled trades upgrading (varies)• Statistical process control for quality (1 day)
Management/ Supervisory (Annual Level)	<ul style="list-style-type: none">• Total worker involvement (TWI) (2.5 days)• Just-in-time training (varies)• Supervisory training (varies)• Management seminars on specific topics (Includes new technology)	<ul style="list-style-type: none">• Supervisory training/development (varies)• Interactive management training (continual based on refreshers) (Initially 20 days)• Management seminars on communication and interpersonal skills	<ul style="list-style-type: none">• Quality control training (2 days)• Interpersonal skills training (1-2 days)

Source: Synthesized from case studies of Canadian and Japanese auto parts companies conducted by Canada Consulting and the Premier's Council Secretariat.

EXHIBIT II.2

Ontario Firms With Formal Training Programs by Employment Size



Source: Ontario Ministry of Skills Development, *The Training Decision: Training in the Private Sector*, April, 1989.

A recent survey conducted for the Canadian Labour Market and Productivity Centre provides a useful complement to these findings from the perspective of individual worker respondents. According to the CLMPC training survey, 41 percent of all full-time employees received no training over the last two years, while another 18 percent received only one week or less of training. More than half of all unskilled workers, potentially those in the greatest need of increased training, received none at all. On average, a full-time employee in Canada receives about four days of training each year. This figure is somewhat higher than previous estimates, most likely because the CLMPC survey included all types of training, such as informal on-the-job training. Significantly, a large number of respondents to the survey — especially unskilled and unemployed workers — expressed a fear that they were poorly prepared to cope with a situation of rapid restructuring and labour market adjustment.⁶

There are many reasons for the relatively low levels of employer-sponsored training in Canada and Ontario. The reasons cited most frequently in responses to the Premier's Council Survey, particularly by small firms, were the high cost and risks entailed in such training. The companies interviewed in the survey also identified problems with finding and training trainers, costs incurred in sending their employees to participate in training courses and the risk of losing the employees who received training to larger companies offering higher pay or other incentives. A 1988 Gallup Poll survey on training similarly found that cost was the major factor inhibiting increased training in industry.

While few of the companies interviewed for the council kept close track of their training budgets, the average expenditure among those that did ranged widely between \$50 and \$500 per employee per year. Per employee training expenditures were highest in sectors like mining, automotive, airlines, computers, public administration, business services, aerospace manufacturing and utilities. They were lower in sectors like retailing, construction, food processing and ground transportation. Even within sectors the range of training expenditures was surprisingly wide. Those companies that viewed training as a critical factor in sustaining their competitive advantage tended to be the ones with more generous training budgets.

THE "FREE RIDER" PROBLEM

These surveys point to a considerable gap between the perceived need for a greater investment in training and the failure of individual firms to meet that need. While it is tempting to see this failure as the result of irrational behavior on the part of these firms, the decision not to invest more substantially in training may represent a purely rational decision for the individual firm, even if it leads to a less desirable result for their particular industry or the provincial economy as whole. What may in part account for this gap between perception and action are the many structural disincentives to invest in training.

The Premier's Council Survey found that a major disincentive for employers to increase their training effort is their fear that the skilled workers they train will be "poached" by other firms, possibly even their direct competitors. This fear inhibits

⁶ Canadian Labour Market and Productivity Centre, *Speaking Out on Training: A CLMPC and National Survey*, Ottawa, 1989.

their investment in the most costly types of long-term or generic skills that are easily transferred among firms. Over 41 percent of the firms interviewed in the Premier's Council Survey reported poaching of skilled employees to be a serious problem. Among high growth firms, the rate was 58 percent. This poaching issue is part of the larger "free rider" problem, whereby those firms unwilling to invest in training take advantage of others who do. Employers accustomed to obtaining their skilled workers through immigration or through recruitment from other firms often perceive little need to develop their own training programs (See Exhibit II.3).

EXHIBIT II.3 The Problem of Poaching

TYPE OF FIRMS	FIRMS REPORTING POACHING AS A SERIOUS PROBLEM (OUT OF 136 FIRMS)	TYPICAL COMMENTS
High-Growth Industries	58%	"Our main source of top employees is stealing from other firms. We're ruthless — they train and we steal."
Mature Industries Global Competitors	44%	"The NC (numerical control) machinists we train are constantly being taken from us by larger firms who don't train."
Resource Companies	17%	"The electronic technologists we train up North head back to Toronto as soon as they get their papers."
Domestically-Focused Companies	11%	"The people we train on CAD/CAM are poached away by other manufacturers who offer higher wages, but have not had to bear the cost of training."
All Firms	41%	

Source: Premier's Council Survey of Industry Training, 1989.

The fear of poaching may also prompt those firms that do invest in training to target their efforts more narrowly into firm-specific skills. This restriction of the skills imparted may ultimately prove self-defeating, as much of the evidence currently available suggests that it is the broader, more generic skills that are most in need and most useful. The broad or generic skills are the ones that can be applied most readily to a range of new and different tasks. They are also the ones that facilitate the ability of workers to learn more easily and acquire additional skills as they become necessary in the rapidly changing work environment. In a period of major structural adjustment, generic skills increase workers' sense of security about their future employability in the face of possible layoffs or plant closures. A failure to invest adequately in more fundamental training may seriously inhibit the ability of firms and workers to adjust to changing economic circumstances.

**THE
CHANGING FOCUS
OF TRAINING**

Despite the limited investment overall in training, the Premier's Council survey revealed that the context in which firms view training has changed considerably. Training that is considered part of a long-term developmental strategy was differentiated from

what could be termed traditional 'operational training'. Most firms provide some functional training to new and recently promoted employees so that they can operate systems effectively and, in the case of managerial employees, acquire some basic supervisory skills (See Exhibit II.4). For a few firms, training is inextricably linked to the implementation of a broader corporate strategy to achieve international competitiveness. In almost every case examined, training in these latter firms was linked to the adoption of a new manufacturing culture or organizational structure.

EXHIBIT II.4

Focus of Company Training Programs

NEW WORKERS	62%
OLDER WORKERS	26%
OTHER	12%

Source: Ontario Ministry of Skills Development, *The Training Decision: Training in the Private Sector*, April, 1989.

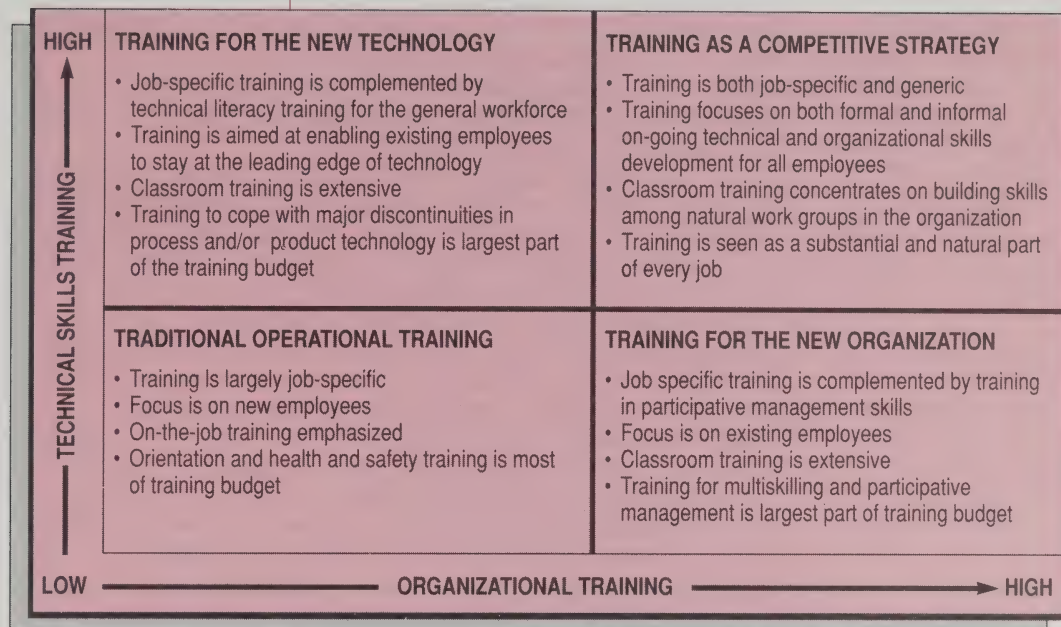
The changing focus of training was most pronounced in firms exposed to international competition. Domestically-oriented manufacturers and non-traded service sector businesses lagged significantly behind international trading firms in both their level of expenditures on formal training and the sophistication of their efforts.

The research for the Council discovered four principal modes of training in industry: "traditional operational training", "training for the new technology", "training for the new organization" and "training as a competitive strategy". The four modes are distinguished by the respective levels of emphasis placed on technical skills training and organization related skills training (See Exhibit II.5).

"Traditional operational training" is the mode which most companies were in ten years ago and in which a significant number remain today. In this mode, firms provide functional training, primarily on-the-job but also in classrooms, up to a level that allows employees to perform adequately within the organization. Training is generally job-specific and seen as a one-time effort to help workers become familiar with their work tasks and work setting. The greatest share of the training budget in the operational training mode is for new employees and for health and safety activity. In general, companies in the resource sector and the domestically-oriented mature manufacturing sector have been slower to move away from traditional operational training than have companies in other sectors.

Companies that were "training for the new technology" put their emphasis on technological skills, but they went beyond teaching workers enough to simply "do the job." These companies were often found in the high growth sectors, where the challenge of adapting to technological change is constant. To adapt quickly to such change, these firms supplement job-specific training with basic technical skills training for all employees to facilitate continuing new learning on-the-job. Classroom-based and certifiable skills training are extensive in these firms. Some technology-oriented trainers were more compliance-based in their

EXHIBIT II.5 Four Modes of Training in Industry



Source: Developed by Canada Consulting, based on industry interviews for the Premier's Council.

approaches; they trained mostly to meet the requirements of their customers, often in the auto or aerospace industries. Many suppliers have focused on just meeting the training agenda of their customers and have not gone beyond this level of effort and taken control of their own training strategy.

Companies investing in "training for the new organization" also formed a distinct group within the survey. These were firms, often in the more mature industry sectors, that suddenly found themselves facing intense cost and quality pressures from overseas competitors. They could not afford to evolve gradually to a new corporate structure and culture, but had to move quickly to create a new organization with the existing employee group. In most cases, their emphasis on increased organizational training was an essential part of their corporate strategy to adjust to a rapidly changing external environment. These companies emphasized training that goes beyond specific job skills and encourages participative management, multiskilling and group problem solving.

Firms which used "training as a competitive strategy" also had the most highly developed training cultures. They typically integrated technological and organizational training into a single skills development approach. Few Ontario firms have attained this level of training, and those that have come from both high growth and mature manufacturing sectors. For instance, one auto parts company that had long relied on semi-skilled labour to operate mechanical equipment now requires a literate workforce capable of interpreting statistical process control outputs as well as mastering complex programmable electronic equipment. This firm has organized a comprehensive training strategy to make the transition. Companies in other mature manufacturing industries such as chemicals, which had traditional hierarchical

organizational structures, now find that they are unable to compete against companies with flatter, leaner organizations. Reorganizations result in expanded job descriptions and areas of responsibility that correspond to the introduction of new technologies. Training in these cases becomes a priority if companies are to implement the organizational and technological changes that will keep them competitive.

“Training as a competitive strategy” is not always a response to radical competitive changes. In some cases, the shrinking supply of qualified new entrants to the labour force has prompted companies to intensify training efforts for existing employees. Such companies have taken a long-term view of the skills that will be needed. Many of these firms emphasized improving the fundamental skills of existing employees and hiring only “skilled learners”, sometimes defined as people with degrees. For at least two firms interviewed, this meant that all new employees, including clerical workers, had to have a B.A. to allow the company maximum flexibility to retrain and redeploy people as needed.

“Training as a competitive strategy” consistently involved more stringent training or training-relevant decisions on the part of the companies. These included more exacting entry requirements to test for future ability, integrated organizational and technological change, and a focus on communications, interpersonal and other social skills training.

In many firms, training decisions used to be made by department heads to meet immediate needs, and the company’s total training expenditure was simply the sum of those decentralized middle management decisions. In companies that treat training as a competitive tool, the CEO is usually spurring the

EXHIBIT II.6 The Changing Industry Approach to Training

TRADITIONAL APPROACH TO TRAINING	NEW APPROACH TO TRAINING
Pockets of training initiated by managers and employees	CEO leads a company-wide training strategy
Company training budget is the sum of departmental expenditures	Company establishes fixed level of investment in training, often based on commitment more than cost-benefit analysis
Training believed to enhance the ability of individual employees to do their specific jobs	Training seen as enabling employees to work together in ways that enhance both quality and productivity
Training decisions made by managers alone with little worker input	Training plans are developed in consultation with workers
Human resources plan is distinct from the company's strategic plan	The human resources plan is a major part of the strategic plan

Source: Canada Consulting, based on industry interviews for the Premier's Council.

overall training effort and there is a tendency to involve the workforce — organized or otherwise — in shaping the training effort. In these companies, the training budget is based on training for long-term, not immediate needs (See Exhibit II.6).

In all the firms that were experiencing pressure to increase technological or organizational skills, there was an already pronounced and growing emphasis on generic rather than job-specific skills. In the technology area this was the result of more pervasive core technologies, like programmable factory automation or personal computer workstations in office environments. These core technologies required a basic level of technical skills from many workers across a number of specific jobs. One insurance company reported that its electronic mail system now requires fundamental personal computer literacy from nearly all employees. In this same firm all sales, service, clerical and claims staff must be able to use the personal computer terminals connected to the main computer system.

In companies fostering participative management environments, employees must develop broader technical skills which allow them to participate effectively in operations decisions. If employees are to participate in solving quality problems, they need training in quality control. In firms where job rotation is practised, generic technical skills training can enable employees to pick up quickly the particular skills associated with a variety of jobs.

In companies where the new organizational culture had taken hold, there was also an increasing emphasis on generic skills training, particularly those skills related to problem solving and interpersonal abilities. As traditional corporate hierarchies give way to flatter organizations, the need for group or team-oriented skills increases. In this form of training, the emphasis is on developing problem-solving techniques, team building and fostering shared corporate values, including the need for teamwork, attention to the customer, the dignity of the individual and the search for constant improvement. Much emphasis in organizational training is placed on viewing problems from the perspective of the company as a whole, not just in the narrow confines of the individual job. Over half of the high growth and mature manufacturing firms interviewed in the Council's industry survey had begun to introduce some form of group or team-based training. Many of the "training as a competitive strategy" companies surveyed viewed training for increased organizational effectiveness to be the most important type of training they undertake.⁷

Many of these companies said the educational system placed too much emphasis on individual achievement, rather than on the ability to work well with others. One firm commented that recruits were selected "primarily for people skills, secondarily for job skills", adding that "it is much easier to teach someone how to work a machine than to try to teach positive attitudes towards the work environment." Other companies observed that it was extremely difficult to train people to become aware of such things as quality and the cost of lack of quality, to work in teams, to solve problems and to measure an acceptable range of tolerance. These were considered much more subtle skills to teach.

The degree of employee involvement in planning and designing training efforts was found to vary considerably. In some industries, workers and their unions have been openly skeptical about the implications of the team concept. They refused to

⁷ See also Peter Warrian, *Occupational Shifts, Skills and Industrial Restructuring: The Steel and Electronics Manufacturing Cases*, Vision 2000, Ontario Council of Regents, Toronto, September 1989.

support management attempts to use the team concept or quality circles to manage the workplace by stress, to introduce speed ups or to encourage workers to discipline each other. They were suspicious that such initiatives really represented attempts to circumvent and undermine the unions and insisted that such efforts would be acceptable only where workers and their unions were involved in a meaningful way in the decision-making process. There were, however, some instances where management and labour were able to reach agreement on formal participation in joint committee processes to plan for the development of team-based training and skill needs. In these instances, management's traditional responsibility for decisions regarding training requirements were devolved onto joint labour-management committees which determined the shape and direction of the training programs.

Workers generally regard the growing importance assigned to generic skills as a promising development. Since generic skills are more portable than job-specific ones, the former allow workers more employment security. Companies that had increased their level of generic skills training reported that employees were less fearful of technological change and more willing and ready to switch jobs if necessary. However, company management also reported concerns that the more generic their training was, the more likely employees would be to leave and apply that training elsewhere. This was especially true for generic technical training in areas of short supply, like skilled electrical trades and computer technicians. Companies also commented that generic training was often more costly than job-specific training since generic skills tend to be taught more in formal classes, whereas job-specific skills tend to be taught more on-the-job by co-workers or supervisors. The costs of formal, off-the-job training also appear to be higher to most companies because much of the cost is hidden in lost output.

The growing importance of generic workplace skills training raises some dilemmas for the current training system. For instance, the "free rider" problem described above could be exacerbated by an increase in more portable skills training. This problem and the generally more formal nature of generic skills training have prompted many companies to look to public institutions to provide this form of training.

The Council's industry survey found that some companies hire graduates directly from the community colleges and then involve them in skills training beyond that acquired in the college programs. This additional training often takes the form of instruction both in the classroom and on-the-job over a year or two. Companies that have adopted this approach benefit by matching general skills acquired in educational institutions with the firm-specific skills acquired on-the-job.

Among employers, however, satisfaction with the graduates of college courses was not universal. In light of the frequency with which employees change jobs over the course of their careers, the portability of the skills college technical programs offer was questioned by several companies. They viewed the colleges as having focused too narrowly on specialized skills that were best left to the firm to impart. Some firms indicated that their employees had learned how to operate a particular piece of equipment, but

lacked sufficient grounding in the principles of its operation to be capable of learning to work with future generations of the technology.

The increasing importance of generic skills raises concerns about the content of workplace training and the method of its instruction. While employers are searching for a more broad-based, comprehensive set of skills in their workforce, numerous provincial training programs have emphasized a shift from the broad occupation-based definitions of training to a more modular, competency-based approach. Training thus defined tends to stress the refining of skills into highly rationalized components. Whereas the former focuses on the range of skills required for the performance of a given occupation, the latter fragments skill development to conform to a narrow definition of a particular job function.

The Council is far from confident that the narrow competency-based approach to training will develop the flexibility or the broad problem-solving skills essential for the workforce of tomorrow. The problems with this approach were captured in the comment of one vocational instructor who had for several years been teaching a competency-based program in auto mechanics to students at a community college: "The students who graduate from this program may be able to do a lot of discrete repair tasks, but they've got no feel for the engine. I wouldn't want to hire them in my garage."

Today's training and retraining programs, both on and off-the-job, are being challenged to abandon the restrictive and fragmented approaches to manual learning that were designed to serve the age of the assembly line. Increasingly, what is being sought are broader and more integrated forms of knowledge, more systems comprehension, more "feel for the engine". This is not to suggest that such knowledge has become a universal requirement of all jobs; however, it is becoming characteristic of a great many workplaces where new technical skills training is much in demand.

The emphasis on increased generic skills also underscores the need for greater literacy, communications and interpersonal skills. Literacy represents one of the building blocks upon which more complex skills can be developed. Basic skills training in the workplace usually takes the form of English as a Second Language (ESL) training for new Canadian employees. It can also involve literacy upgrading for native-born Canadians whose reading skills fall below required levels. Although 60 percent of firms in the Premier's Council industry survey reported that inadequate literacy skills constituted a problem for them, less than 20 percent were actually attempting to address the problem.

In some cases, firms have brought instructors from community colleges into the plants to teach English language skills; in other cases, workers are being trained to upgrade the language skills of their team members. One effective workplace literacy program in the province is the Ontario Federation of Labour's Basic Education for Skills Training (BEST) program. The BEST program trains other workers in the plant to act as language teachers. This peer-provided training program helps overcome the social stigma of being labelled illiterate and is viewed as highly successful by many companies that have taken advantage of it.

To be successful in increasing the level of generic skills training, public sector training needs to become more adept at reading the demand signals of industry. The college system is not well-designed to be demand driven. Industry input to the colleges comes either through participation on advisory committees or in the purchase of specific training packages. Colleges anxious to expand their fee-based training for industry have also faced major staffing and facilities hurdles.

The private sector training effort has suffered from comparable problems. The vast majority of private training firms are small and their quality is often uneven. Many are also quite new. The above-noted Ministry of Skills Development survey (1989) found that one third of all private training firms in the province were less than four years old and 65 percent had less than 10 employees. Many companies interviewed in the Council training survey expressed some wariness of private trainers. Typical was a complaint from one aerospace firm: "We are swamped with pamphlets from private trainers, but it is very difficult to find out about the quality of what they offer. A lot of them operate out of a suitcase and think anything can be done in three easy steps."

Some companies did report very satisfying experiences with private training organizations, but nevertheless noted the difficulty in being able to determine quality. Another concern was the tendency of private training to be primarily managerial. The MSD survey mentioned above confirmed that 91 percent of all the province's private trainers served managerial clients, while only 24 percent dealt with production workers and about the same percentage with service workers.

The concerns of industry about the quality of external training providers seem to be strongest among smaller firms which lack resources to mount effective in-house training programs. A Canadian Federation of Independent Business survey of nearly 5,000 small and medium-sized businesses in Ontario in 1988 found that 68 percent were dissatisfied with apprenticeship programs, 52 percent with community colleges and 36 percent with private training institutions.

The quality problem in training for small and large businesses in Ontario is a matter of making the buying power of industry yield higher calibre and more effective training. One response to the problem could be to exercise collective buying of training services on a sectoral basis. In fact, this has been done successfully in the province before with the Ontario Automotive Parts Technology Centre, an effort which dramatically raised the availability and quality of statistical process control training in the auto parts sector in the early 1980s. The Centre's training programs were jointly funded by government and industry users, and its quality control curriculum was developed in collaboration with the original equipment manufacturers.

Small business faces particular problems in the area of training. Foremost among these is the cost of training and the problem of poaching. Most of the firms with under 100 employees included in the Premier's Council Survey cited high cost as the major factor inhibiting them from training. Smaller firms simply found the cost of training their own apprentices to be prohibitive. Giving time off from work to send people on training courses was doubly expensive for these firms — in terms of time lost and in terms of the

TRAINING IN THE TRADITIONAL SERVICES

direct cost incurred in the training. Finding and paying suitably qualified trainers to undertake the training within the firm posed additional problems for the smaller firms.

Those companies which do invest in training cited attrition and poaching as significant problems. In one case, a firm discontinued its apprenticeship program because of the high rate of employee attrition. Poaching of key workers from a small firm causes a great deal more disruption than in a larger organization. The high cost of training, combined with the possibility that skilled employees might be hired by competing firms, can act as a powerful disincentive for small companies to upgrade the skills of their employees.

Nevertheless, a 1988 survey by the Canadian Federation of Independent Business (CFIB) found that three-quarters of small companies are engaged in improving the skills of their staff. However, these firms prefer to use in-house, on-the-job training that focuses on the specific needs of the individual and the firm. The CFIB found that small business overwhelmingly supports less structured, grass roots, community-based arrangements to deliver relevant training programs through both public and private training institutions.

Training activity in traditional service companies like department stores, restaurants and retail banks often differs from that of other businesses in a number of ways. One difference stems from the fact that traditional service companies usually build part of their competitive strategy around their employees, and thus have always trained as part of their business effort. Team building, putting customers first and going the extra mile in offering high quality service are familiar concepts in many traditional services.

Training conducted by traditional service companies falls into four basic categories: professional and technical, marketing, sales and customer service, management development and standard operating procedures. While the majority of larger service firms engage in some training activity in all of these areas, the survey results showed more emphasis on technical skills and organizational skills training in those firms explicitly using training as part of a competitive strategy (See Exhibit II.7).

One leading service firm characterized its training programs as the way the company defines and communicates its corporate mission and values. Responsibility for training in this firm had previously been spread through the various functional departments but had recently been consolidated into a stand-alone training department. A firm representative explained that, "training is the key lever in the way we operate our business, and functional alignment just was not strong enough". The main focus of this firm's training effort over the last few years has been on quality. All employees, from the president down, have participated in quality awareness programs developed specifically for the firm.

WHERE TRAINING IN INDUSTRY FALLS SHORT

Despite the evidence that a new training outlook is emerging in industry, there remain serious shortcomings in the training strategies adopted by many companies. Studies conducted under the auspices of Labour Canada's Technology Impact Research Fund (TIRF) and Technology Impact Program (TIP) noted a number of common problems, particularly in firms still focused on traditional operational training. The most significant one was the limited access to available training. In those firms where workers

TRAINING CATEGORIES	DESCRIPTION
Professional & Technical	Training to build and maintain state-of-the-art knowledge in one's profession or in a specialized technology. Includes topics such as finance, banking, actuarial science, accounting, computer science and engineering.
Marketing, Sales & Customer Service	Training in marketing and selling techniques and customer service. At times includes a cultural element, such as building a company belief that the customer comes first and quality matters.
Management Development	Training in supervisory and leadership skills, project management, negotiations, performance appraisal, time management, problem analysis, decision making and other management skills.
Standard Operating Procedures	Training in how to operate in a job day-to-day, how to operate basic equipment (such as a cash register) and do basic tasks. Includes orientation.

Source: Developed by Canada Consulting from interviews conducted during industry survey for Premier's Council.

were not directly involved in decisions about access to training, problems can arise over the exercise of unfair discretion in the allocation of training opportunities. Access to training may be offered without regard to seniority in the plant or purely on the basis of favoritism. Furthermore, training opportunities for older workers were often restricted.

Research conducted under these programs reported numerous instances where training for the new technologies was woefully inadequate. In one study, the quality of training offered by a vendor of high technology equipment was referred to as a waste of time, amounting to little more than a sales pitch for the vendor's equipment. Skilled workers reported being asked to operate sophisticated equipment with very little training and were, in some instances, expected to acquire the necessary training on their own time. Often, the training adopted was strictly of the "trickle-down" variety; instruction was provided for supervisors who in turn trained the lead hands, who in turn trained one or two production workers and so on down the line. After a while, the quality of the training deteriorated to the point where it amounted to a demonstration of a few pushes and pulls of a switch.

Despite the concerns outlined earlier about the shrinking pool of new entrants to the labour force, the low level of investment in training sometimes reflects management's belief that the existing workforce is untrainable. Managers occasionally expressed pessimism about the possibility of training older workers due to their low levels of basic education. Sometimes managers rationalized this in terms of a belief that production workers were not interested in acquiring the training to operate more sophisticated technology being installed in their plants. Despite the difficulty of hiring skilled recruits, companies often seemed as intent on training new unskilled employees as in retraining already experienced employees (See Exhibit II.8).

In some instances, the training strategies adopted by firms seemed to devalue much of the accumulated knowledge and skills of the current workforce by favouring workers with formal credentials. Management in some manufacturing firms believed in hiring graduates directly out of community or technical colleges with some formal training in computerized equipment, rather than training their current workforce. They chose this approach because the new workers frequently had the computer and numerical skills needed and they could often be located outside the bargaining unit. The disadvantage, however, was that this practice undermined the vast store of acquired or ‘tacit’ knowledge embodied in the current skilled workforce. Often these tacit skills, which are highly valued in other companies, are lost to employers who adopt this strategy. As one worker in an automotive plant commented:

“What our company is doing is going to the local college and getting kids from there who have computer training but absolutely no tool knowledge at all. When they bring in the new machine it’s the kid they put on it because he had some computer experience. Our company just refuses to train anybody.”

EXHIBIT II.8

Means of Addressing Skill Shortages

TRAINING UNSKILLED RECRUITS	33%
RETRAINING CURRENT EMPLOYEES	30%
HIRING SKILLED RECRUITS	8%*

* Down from 29% in previous survey

Source: Ontario Ministry of Skills Development, *The Training Decision: Training in the Private Sector*, April 1989.

DISSATISFACTION WITH GOVERNMENT TRAINING PROGRAMS

The chronic underinvestment in training by private firms remains a pressing problem and speaks to the need for a mechanism to increase the skilled labour supply. This traditionally has been the role of the public sector, but both management and labour express strong reservations about the effectiveness of the current public policy approach.

The Premier’s Council survey of training in industry posed several questions about the effectiveness of current government programs at both the federal and provincial levels. Over half (56 percent) of the firms found that government programs were not particularly useful. This finding is corroborated by the 1987 Ministry of Skills Development survey which showed that half of the firms using government training programs found that the programs had no effect on training decisions by the firm. An additional 9 percent of the firms felt that government programs actually discouraged training (See Exhibit II.9).

Companies of varying size and representing a range of sectors commented on the excessive bureaucracy that inhibited access to government training funds. There were repeated complaints about too much paperwork, too many restrictions, the high cost of access (particularly for smaller firms) and too little return on investment to justify clearing these numerous hurdles.

THE NEED FOR
FUNDAMENTAL
CHANGE

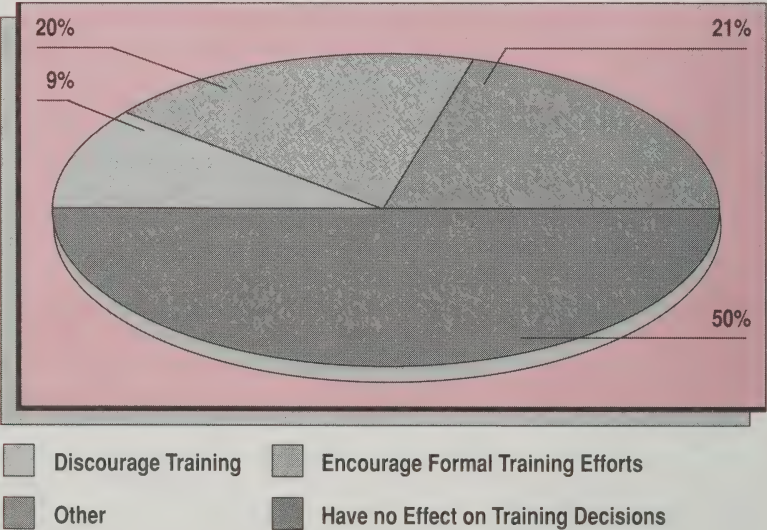
EXHIBIT II.9

Reflecting on the general frustration with the existing program offerings, one firm commented that they would need to “hire more people and spend more money to get into the programs than they are worth”. There was also a strong sense of dissatisfaction among workers and those unemployed or employment disadvantaged with the current policy and program mix. The major complaint concerned the confusing array of programs and the multiple points of entry into the training system. This bewildering roster of programs and entry criteria, together with the lack of necessary supports, was sufficient to discourage all but the most determined of potential users.

Determining what kinds of training are available and accessible is a daunting task, given the many initiatives by both levels of government and their changing status over time. The difficulties encountered in gaining access to these programs are compounded by the often limited efforts made by governments to inform the public about what training opportunities are available. One reason given by government for not undertaking a more adequate publicity effort is that it might raise people’s expectations unreasonably.

The current approach to workplace training will not meet the challenges the province faces. We suffer from inadequate levels of investment and an inability to deliver consistently high quality training, even when we do invest. While levels of training are increasing, most firms nevertheless believe they are not doing as much as they should. Government attempts to rectify this problem have left all parties dissatisfied. In short, there is a rising crescendo

Reported Effect of Government Training Programs
Ministry of Skills Development Survey, 1989



Note: Breakdown of 100 firms interviewed was: 50 percent with less than 100 employees; 66 percent service companies; 34 percent goods producing companies. Figures are rounded.

Source: Ontario Ministry of Skills Development, *The Training Decision: Training in the Private Sector*, April, 1989.

of dismay about the training problem, but there are slow and uncertain responses to it. If the situation remains unchanged, the province will be poorly positioned to rise to the challenges of economic restructuring and technological change.

While many individual firms have increased their training efforts, business as a whole has not responded to the challenge of reducing the training deficit. The “free rider” problem and the shift to more generic skills requirements make many firms wary of increasing their training efforts. Furthermore, much of the training currently being provided in industry is of varying or poor quality. Where firms have attempted to upgrade their training efforts, too frequently they have shown a preference for narrow competency-based or job-specific approaches to training which fail to provide workers with the broader technical and organizational skills that are essential to their functioning effectively in more flexible and technologically sophisticated organizations. This approach also denies workers the portable skills which would allow them maximum mobility in a period of economic restructuring. Failure to increase the level of investment in these broader skills will seriously impede Ontario’s strategy of promoting higher value-added restructuring.

Many of these problems reside in the lack of active participation and cooperation between the principal labour market parties — management and labour — in devising and implementing training strategies. The Premier’s Council recognizes that the implementation of successful training strategies increasingly relies on the willingness and commitment from all parties to the training process. Jurisdiction over training policy can no longer be regarded as the exclusive preserve of one party or the other. The cultivation of a new training culture in the province requires a radical rethinking of how this jurisdiction can be shared.

THE GOVERNMENT ROLE

The provincial training scene is cluttered with public sector bodies that, one way or another, have something to do with training. Interaction among these groups is often limited and duplication of services is commonplace. Government funding for training in Ontario is provided by both the federal government, through Employment and Immigration Canada (CEIC), and the provincial government, primarily through the Ministry of Skills Development (MSD). There are also numerous advisory bodies across the province, including Community Industrial Training Committees, federal Community Futures Committees, Local Advisory Councils to advise Canada Employment Centres and, within the colleges, an extensive network of local Program Advisory Committees (PACs) that also advise on apprenticeship. Ontario Skills Development Offices (OSDOs) and Youth Employment Counselling Centres add to the dizzying array of players by serving as delivery agents for provincial training programs.

To the private sector — and this includes industry, labour, and community groups — the workings of government are often viewed as complex and inscrutable. The public sector training effort in Ontario gives the private sector every reason to confirm that view. Sorting out the players and their roles is a difficult enough task; making sense of the multiplicity of training programs on offer is even more daunting.

Training policy in most industrialized nations is guided by the principle of sustaining growth and productivity increases through improving the skills and qualifications of the labour force. In contrast, public training policy in Canada and Ontario has focused on full employment and job creation — frequently to the detriment of skills formation — and has only belatedly come to the recognition that development of skills is important in its own right. Because labour market policy has focused on short-term income maintenance to tide people over until they can find a job, the current system does little to provide workers with the level of ongoing skills development needed to facilitate adjustment during periods of economic restructuring.

The current policy approach suffers from several shortcomings:

- a critical shortage and continued reduction of the amount of funding available for training;
- a preoccupation with short-term, entry-level employment for people who are essentially job-ready;

- a dearth of opportunities for longer-term upgrading or skills development at the more advanced, technical end of the training spectrum;
- the absence of a coherent framework for shaping training policy.

The primary obstacle to gaining access to more effective training for the user lies in the profusion of programs offered by both levels of government. The sheer number of programs, complicated by many different points of access and terms of eligibility, makes it difficult for those seeking training to know what exists and for training deliverers to address client needs. The main barrier to gaining access to more effective training for the user is the fragmentation of the training system, particularly at the local level. In fact, there is no real understanding of what constitutes the training and education system at the local level.

Whereas the province has generally favoured a broad, multipurpose approach to training, the current federal approach to training is based on the rationale that scarce resources should be targeted to those most in need. The current abundance of programs targeted at youth and the paucity of programs for older workers speaks to how the current policy mix of both levels of government has been patched together in response to past crises.

But training policy cannot be designed by looking through a rear-view mirror. Government training programs should be part of a continuum of labour market policies designed to maintain income support during periods of unemployment, provide ongoing training for both employed and displaced workers, and facilitate the integration of new entrants and the employment disadvantaged into the workforce. While all of these goals help ensure that labour markets adjust equitably to changing economic conditions, it is also important to strike an appropriate balance among them.

EXHIBIT II.10 The Six Streams of the Canadian Jobs Strategy

PROGRAM	DESCRIPTION	% 88/89 BUDGET
Job Entry	Facilitates transition of youth and women from school or home into the labour market	35%
Job Development	Assists long-term unemployed in labour market	22%
Community Futures	Assists workers in communities facing severe economic conditions	8%
Skill Shortages	Provides financial assistance to employers to train workers in skills in short supply	29%
Skill Investment	Assists workers threatened by technological or market changes in obtaining new skills	4%
Innovations	Supports pilot projects and demonstration projects which can help develop employment	2%

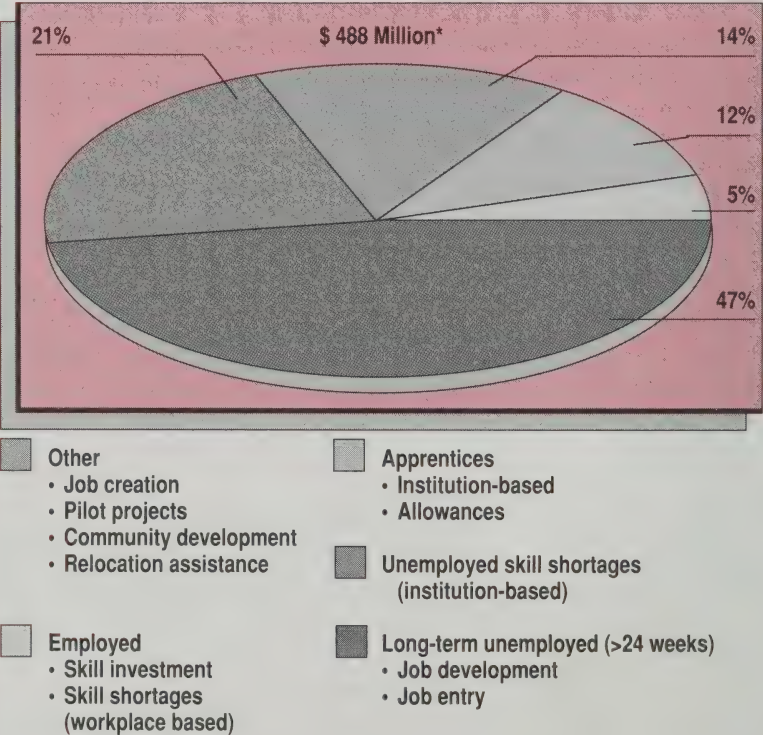
Source: Ontario Ministry of Skills Development

The federal government's training approach, reinforced in the 1985 Canadian Jobs Strategy (CJS), is to engage in selective labour market intervention where the need for support is greatest. The CJS includes six different programs: Job Development, Job Entry/ Re-entry, Skill Investment, Skill Shortages, Innovations and Community Futures (See Exhibit II.10).

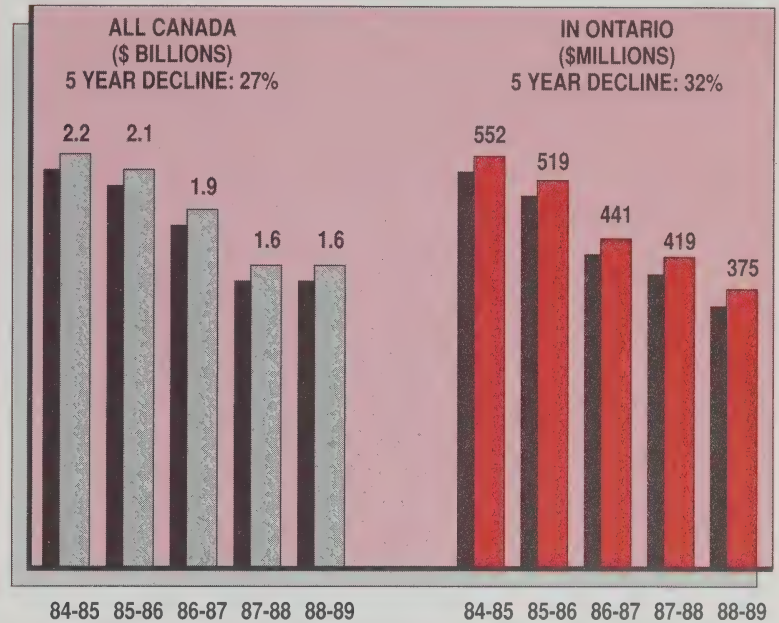
Government measures directed towards labour market adjustment can have several thrusts. They can be designed to enhance competitiveness, to maintain labour market stability or to assure that access and equity goals are served. An active and industry-sensitive policy thrust attempts to anticipate and build the skill levels and employment prospects of all members of the labour force, bracing both workers and their workplaces to meet restructuring head-on. A reactive, stabilizing policy orientation tends to deal with the victims of labour market crises after these situations emerge, rather than anticipating them and preventing or mitigating their effects. Access or equity-based labour market policy is necessarily reactive.

There is little doubt that the reactive approach prevails in the CJS. Exhibit II.11 illustrates that 68 percent of federal training expenditures in Ontario in 1987-88 went to the unemployed. CJS programs offering 'anticipatory' training to improve the overall education and skill levels of the employed workforce accounted for only 33 percent of funds spent in Ontario and covered 44 percent of total participants.

EXHIBIT II.11 Federal Training Expenditures in Ontario, 1987-88



*Includes: \$420 million CJS program expenditures
\$63 million Section 26 expenditures (income support for UI recipients receiving in-school training)
\$5 million Section 25 expenditures (income support for UI recipients enrolled in job creation programs)
Source: CEIC, Annual Report, 1987-88.



Note: Figures for Canada do not include approximately \$200 million of administration.
Source: CEIC, Annual Report, 1987-1988.

The contribution made by the CJS to meeting the many training challenges in Ontario has been hampered further by recent reductions in federal funding. Exhibit II.12 indicates that both the general level of federal funding and the amounts allocated to Ontario under these programs have been reduced steadily since 1984-85.

The CJS has not been an effective vehicle for upgrading the skills of the current workforce or retraining displaced workers who would like to improve their skills. As it is now structured, the CJS places an overwhelming emphasis on short-term, entry-level employment training. The only opportunities for longer-term upgrading or skill development at the more technical end of the training spectrum are for apprentices. Even if the number of active apprenticeships were to be greatly expanded, this option would be of no use to the majority of workers in need of skills upgrading.

The gap in federal training programs relative to the long-term needs of industry is significant. Only two programs with limited funds are accessible to industry for critical skills training in new technologies. For skilled trades upgrading, there are no programs in place to address the needs of employed workers. The Skills Investment program, in particular, fails to meet this need. The program is designed to be used primarily by small businesses, usually manufacturing operations, that are undertaking computerization of the production process or office automation. The most common type of training funded by this program is short sessions on firm-specific applications of software.

There is even reason to doubt whether the CJS is effectively achieving the limited goals that have been set for it. A recent review by the House of Commons Standing Committee on

Labour, Employment and Immigration expressed deep concern over the quality of training provided under the program. It was suggested that many employers use federal training money as little more than a wage subsidy, and many trainees receive job-specific, low level skills training that cannot be transferred elsewhere. Furthermore, the duration of training tends to be too short to achieve skill levels leading to stable, higher paying employment.⁸

There are almost no existing federal programs appropriate for retraining or upgrading the skills of even a small fraction of the millions of people who move in and out of the labour market every year. There is a large and growing gap between training opportunities for those who have a steady and long work history and those who are about to make the first major training investment of their working lives. Federal programs that deal with displaced workers before they join the ranks of the chronically employment disadvantaged are few indeed. There is also no program to help people who are caught in dead-end jobs to upgrade their skills and move on.

The Canada-Ontario Agreement on Training and the Role of the CITCs

The central goal of the Canadian Jobs Strategy was to refocus federal training policy away from short-term cyclical problems and the previous government's emphasis on job creation. The intent was to provide more decision-making over federal expenditures directly to employers and to encourage a market-driven definition of training needs. In Ontario, the institutions critical for the realization of this goal were the Community Industrial Training Committees (CITCs).

The CITCs date from the mid-1970s, but their role changed dramatically when the Canada-Ontario Agreement on Training (COAT) was signed in 1986. Under the agreement, the CITCs were mandated to act as brokers to purchase institutional training on behalf of the federal government, using the funds of the CJS. Expenditures on the CITC Indirect Purchase Option have increased yearly, reaching a total of \$37.1 million in fiscal 1988-89. The provincial mandate of the CITCs is to serve as a catalyst for training in their local communities, and they play this role by identifying local training needs and recommending programs to meet them. The CITCs' four key roles in their local communities are to:

- **Advise** – assess present and future training needs in their communities and provide feedback to governments on training programs;
- **Advocate** – promote a training culture in the employer community;
- **Facilitate** – link government services and funding with employers; bring together representatives from all sectors of the local economy who are interested in skills development;
- **Arrange** – arrange for skills training in their community using the indirect purchase option of the CJS.

⁸ House of Commons, Standing Committee on Labour, Employment and Immigration, *A Review of the Canadian Jobs Strategy*, Ottawa, 1988.

There are currently 57 CITC's. The CITC's may have contributed to making training purchases more sensitive to local labour market requirement. The CITC model, however, is flawed in many respects:

- The members of CITC's are not nominated by representative organizations and are therefore not accountable, except to the government;
- Because the CITC's were seen as vehicles for "privatizing for the sake of privatizing," there was chronic difficulty in attracting representatives of the labour movement;
- Lacking a broader institutional base, the members of CITC's had no technical support for their role, except from the government;
- Interest groups have criticized many CITC's for being unresponsive;
- Colleges have questioned the CITC's "honest broker" role in allocating training purchases.

113

The Premier's Council has serious concerns about the functioning of the CITC's. Later in this section, in our discussion of the proposed Ontario Training and Adjustment Board, the Council will recommend the establishment of Regional Training Committees under the authority of that Board. After federal-provincial consultation, these Regional Training Committees should absorb the functions currently assigned to the CITC's. Moreover, this must be done as soon as possible to avoid compounding the problems of duplication and lack of coordination that have been described.

The Labour Force Development Strategy

The Premier's Council has not been alone in recognizing the need for radical change in the current training system. New policy initiatives launched by the federal government in April 1989 were designed to overcome some of the problems in its current policy structure. As originally announced, the federal Labour Force Development Strategy had four basic goals:

- to increase the private sector's role in training and ensure the responsiveness of training to current labour market needs;
- to realign the Unemployment Insurance (UI) program to direct more expenditures to training and re-employment measures for the unemployed;
- to improve UI benefits to respond to the needs of working parents and workers over 65;
- to reduce work disincentives within the UI program.

The federal government contracted with the Canadian Labour Market and Productivity Centre (CLMPC) to organize and administer a round of private sector consultations as part of this strategy. The CLMPC struck six task forces, involving both business and labour representatives, to advise on policy development and program design from the perspective of the private sector. The recommendations of these task forces were intended to guide the federal government in the redesign of its labour market and training programs. Those recommendations will have critical implications for this report and for the future policy direction adopted by the province. Accordingly, the Premier's Council urges that the provincial government follow

closely the progress of recommendations emerging from this process. The province should work with the federal government to ensure that the implementation of the Labour Force Development Strategy attempts to meet the long-term training and adjustment needs of the Ontario labour force identified in this report. This is a time of reconsideration of previous training strategies at both the federal and provincial level and represents a major opportunity to develop a rational and mutually supportive approach.

EXHIBIT II.13

Provincial Training Funding by Ministry of Skills Development Program

MSD PROGRAM SERVICE	1988/89 FUNDING (\$ MILLIONS)	1989/90 FUNDING (\$ MILLIONS)
FUTURES	92.3	90.3
OntarioSkills	32.5	33.7
Summer Employment	28.5	5.4
Ontario Basic Skills (Includes workplace)	23.0	25.6
Training Consulting Service (OSDO)	16.8	17.9
Summer Experience	14.7	10.5
Apprenticeship	13.0	23.7**
Transitions	6.8	4.0
Ontario Training Corporation	6.2	6.8
Youth Employment Counselling Centres	4.4	6.5
Community Literacy	3.6	6.0
Technicians/Technologists Skills Updating	3.0	3.6
Environmental Youth Corps	2.4	11.0
Special Support Allowances	2.2	2.3
Youth Venture Capital	2.1	2.3
Trades Updating	2.0	4.0
Ontario Training Trust Funds	1.5	2.0
Ontario Help Centres	1.3	1.5
Student Venture Capital	0.9	0.9
Community Action Fund	0.8	
ADDITIONAL RELEVANT MSD PROGRAMS		
CITC Support	1.7	2.3
Int'l Mktg. Interns	2.0	2.0
Apprentice Tool Fund	3.8	4.4
Special Projects Fund	1.25	1.25
Toyota		1.7

MSD EXPENDITURES PERTAINING TO INDUSTRIAL TRAINING

TOTAL MSD = \$280.9 MILLION
TOTAL "INDUSTRIAL" = \$148.0 MILLION

* Printed Estimates data

** Includes administration costs plus \$10 million provincial allocation towards seat purchases for apprentices in 1989/90

In its previous report, the Premier's Council recognized that Ontario has been forced to compensate for the gaps in federal training policy. Ontario has had to respond to the federal government's reduction in levels of funding for job training programs, as well as to the federal government's reactive approach to training policy. Increasingly, Ontario has taken the lead in developing its own training mandate and strategies to carry it out. Admittedly, some of these Ontario solutions, in the form of a proliferation of provincial training programs, have only exacerbated existing problems.

Ontario has tried to concentrate on programs that contribute to a strong industrial training base. The establishment of a Ministry of Skills Development (MSD) constituted the first step in promoting a new awareness of the role of training in contributing to the province's economic development. This initiative was later complemented by the launching of the Ontario Training Strategy. Significant as these initiatives have been, it is time to evaluate their effectiveness and determine whether new approaches are needed to meet the challenges that lie ahead.

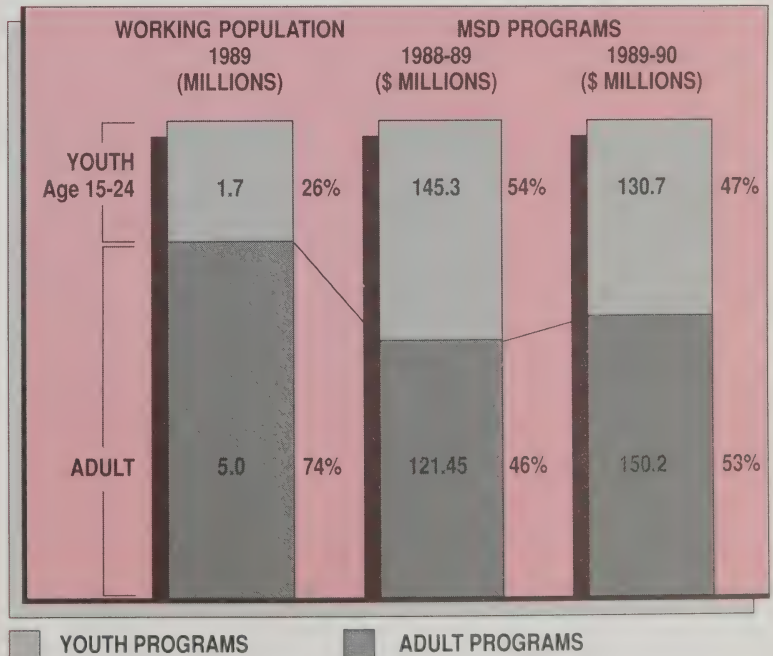
Since 1985, the province has steadily increased its annual financial commitment to industrial training programs. In fiscal 1989-90, total provincial expenditures on these programs by the Ministry of Skills Development amounted to \$280.9 million, of which \$148 million represented "industrial training" (See Exhibit II.13).

Repositioning Provincial Programs

In comparison with the highly targeted federal effort, the distribution of Ontario training funds for the adult population represents a balance of policy goals. Despite its more active

EXHIBIT II.14

The Focus on Youth In Provincial Training Programs



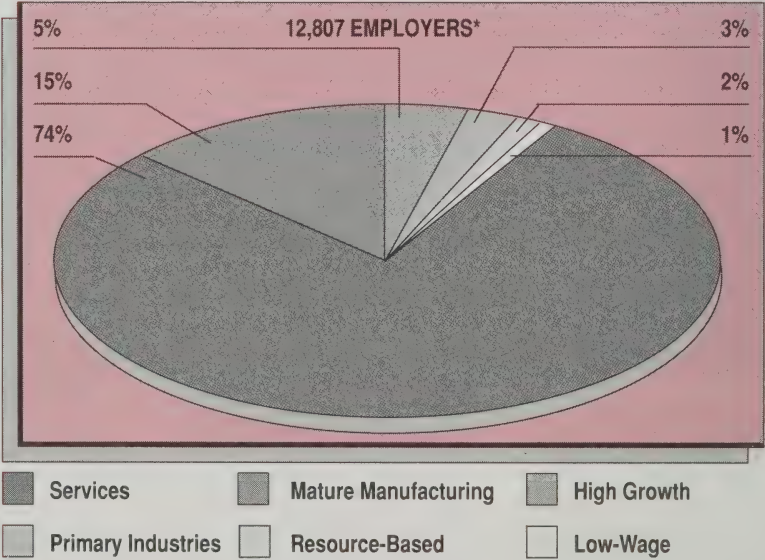
Source: Canada Consulting, based on Ontario Ministry of Skills Development and Ministry of Treasury and Economics data.

approach to serving industry's competitive needs, provincial policy is not without its problems. For instance, the tendency to focus on youth unemployment in a time when positions for new entrants go begging indicates that certain funding priorities have been out of touch with changing economic and demographic realities. Training programs directed towards youth represented over 50 percent of the 1988-89 provincial training budget, raising serious questions about the appropriate allocation of these funds. Youth programs designed to develop the critical skills that both young people and their industry employers require are certainly defensible. But when demand for young employees is high and climbing, programs such as these must be focused more effectively to meet the needs of their target groups. The challenge today is to deliver programs such as FUTURES to the hardcore disadvantaged youth, especially those unlikely to seek or obtain educational upgrading on their own. The Premier's Council supports the repositioning of provincial training program emphasis so that youth programs are focused more effectively to meet identified needs while resources are reallocated to meet the skills development needs of adult workers. As Exhibit II.14 illustrates, this repositioning is already beginning to take hold and funding for youth programs has started to decline.

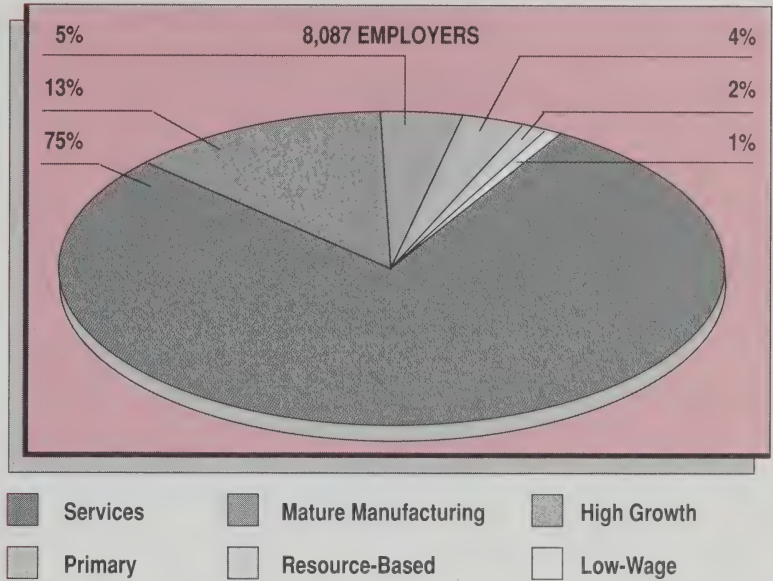
Provincial training programs also suffer from a number of other problems, many of which reside in three elements of the provincial training strategy: the Training Consulting Service, Ontario Skills and the Ontario Training Corporation.

The effectiveness of the province's "training consultants" approach has been questioned because of the overwhelming tendency to provide support to employers in non-traded sectors, limiting its usefulness and applicability. The consulting assistance

EXHIBIT II.15 OSDO Employers by Competitive Industry Type, 1988-89



* Refers to employers using the Training Consulting Service
Source: Canada Consulting, based on Ontario Skills Development Offices' data and interviews.



Source: Canada Consulting, based on Ontario Skills Development Offices' data and interviews.

is thus largely unavailable to a wide range of firms that need to adapt their training efforts to global competitive pressures.

The Ontario Skills Incentive Fund and the Training Consulting Service of the Ontario Skills Development Offices (OSDOs) represent Ontario's key programs for training within industry and together account for \$51.6 million of the total Ministry of Skills Development training budget. Over two-thirds of the Ontario Skills Development Office employers using the Training Consulting Services in 1988-89 were in the service sector, while only 15 percent were in mature manufacturing businesses like automotive, steel and some chemicals, and only 5 percent were in high growth businesses like aerospace, telecommunications and computer equipment manufacturing (See Exhibit II.15). Sixty-three percent of employers receiving training funds through the Ontario Skills Incentive Program in 1988-89 were in the service sector. A surprisingly high percentage of the trainees funded through these programs (40 percent) were receiving computer training in programming, systems analysis, software design and the like. Very few were receiving skills training in the skilled trades or other areas directly relevant to manufacturing (See Exhibit II.16). Overall, these programs suffer from a failure to deliver the quantity and quality of support necessary to the firms that need it and a lack of integration into a broader policy framework.

The Ontario Skills Incentive Fund's focus on the non-traded service sector limits its usefulness to many other critical segments of the provincial economy. But other aspects of the Fund's design and delivery have been criticized as well. Medium-sized and large firms complain of the smaller firm biases structured into the program mandate. They also object to the requirement that they provide detailed training plans. For larger companies with a sophisticated internal training function, this often amounts to unnecessary paperwork. In fact, the paperwork is generally

PROBLEM	EXAMPLES
Support for Mainly Non-Traded Businesses	Ontario Skills Training Consulting Service (OSDO)
Restrictive Eligibility Criteria/Limited Access	Ontario Skills Trades Updating Apprenticeship
Not Targeted to Demand	Ontario Skills Training Consulting Service (OSDO)
Not Serving Original Goal	Ontario Training Corporation*
Lacks Clear Focus	Ontario Training Corporation FUTURES
Preoccupation With Entry Level (Youth) Employment for the Job-Ready	Youth Employment Counselling Centre Summer Employment Summer Experience

* Not a program; a Schedule ii commercial agency.

considered excessive by small and larger firms alike.

Another provincial training service, the Ontario Training Corporation (OTC), was created in 1988 with a mandate to strengthen the quality and quantity of training done in the workplace. It develops and offers two main training services: the SkillsLink, which provides computerized information on available training courses and materials, and its Investment Funds, which support the development of training materials and training technologies. The OTC is also involved in the professional development of trainers.

The Ontario Training Corporation represented a recognition that government's involvement in the delivery of training services needed to be carried out through a separate Crown agency. The OTC was created at a time when the government was pursuing a direct operational role in training and when companies were dealing with their own training needs individually. At that time the government's policy focus was on the small-and medium-sized company and gave no particular attention to traded industries.

The Premier's Council recommendation for a bipartite approach to training carried out under the direction of the Ontario Training and Adjustment Board represents a fundamental change in Ontario's approach to training. Rather than being a delivery system focused on the individual firm, the new approach will look to sectors and regions as the organizers of training delivery. Previous structures and agencies will need to give way to an OTAB directed approach and the reorganization and redirection of current efforts are to be expected. In the case of the Ontario Training Corporation, this raises the question of the need for its rationalization within the structure of the OTAB and the review of its current services within the future program directions and service offerings of the OTAB.

Of particular concern is the future role of the Skills Link data bank. Many organizations involved in the training field have

pointed out the pressing need for the creation of an on-line computerized data bank to provide ready access to complete information about all available training programs, projects and courses offered throughout the province. Ready access to such a data bank for both employers and employees through a variety of different agencies would greatly improve the functioning of the training system. In conjunction with the OTAB, the Skills Link should be transformed into a comprehensive on-line data base providing information to employers and workers on all available training programs, projects and courses offered in the province. The data base should be readily accessible at no charge through CEIC offices, a range of community-based organizations, as well as the sectoral and regional committees of the OTAB.

The Basic Skills Challenge

The challenge of working with new technologies and expanding the overall skills level of provincial workers depends upon their having an adequate skills foundation to begin with. Recognition has been spreading in recent years that illiteracy in the labour force may constitute a significant barrier to realizing this goal. Accordingly, the province has attached increasing importance to overcoming this problem.

A centrepiece in the provincial strategy to combat illiteracy is MSD's Ontario Basic Skills program, offered through the Colleges of Applied Arts and Technology. The program provides training in the basic skills, such as literacy and numeracy, essential to gaining employment or advancing a career. A closely related program is Ontario Basic Skills in the Workplace, which supports literacy training on work sites and other locations convenient to the workplace. These training opportunities may be sponsored by labour unions, employee associations, employers and/or employer associations. Organizations as diverse as the Ontario Federation of Labour, the Labour Council of Metropolitan Toronto, the Hamilton and District Labour Council and Teachers of English as a Second Language have received grants under this program. The true strength of this program lies in the fact that it has been genuinely responsive to the needs of the participants. The cooperative efforts launched under this initiative are proving to be a model for the kind of social and economic partnership needed to meet the challenge of the future education and training needs in the province.

The Council endorses the goals and recognizes the achievements of the Ontario Basic Skills Program. This program should be coordinated with the Ontario Basic Skills in the Workplace Program, and both industry-based training efforts should be operated in cooperation with the other industry training programs offered under the auspices of the Ontario Training and Adjustment Board.

THE AILING APPRENTICESHIP SYSTEM

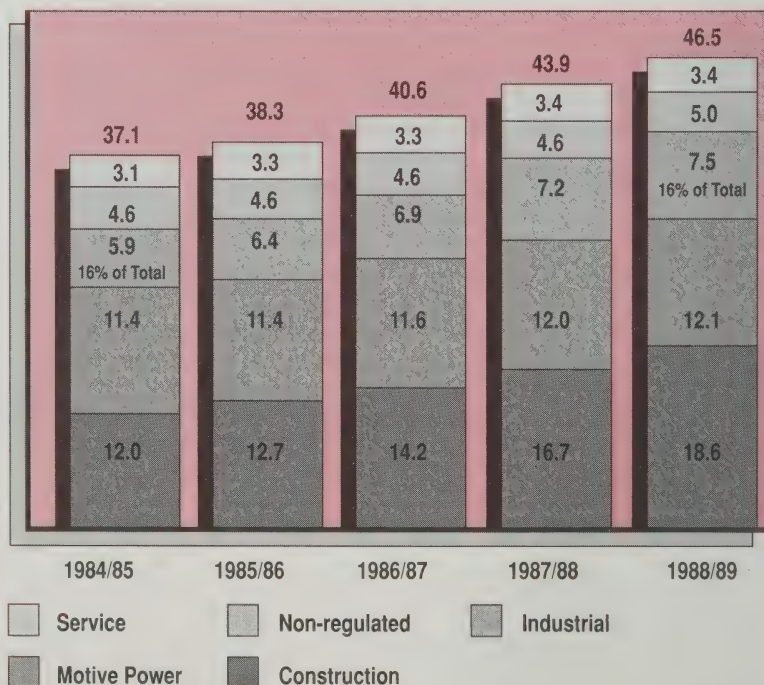
Ontario's apprenticeship system is in desperate need of reform. Despite well-intended efforts to improve the provincial training system, significant problems still need to be tackled.

Nowhere is the mismatch between existing policy and the long-term needs of the economy more evident than in the case of the apprenticeship system. As the industrial training approach with the longest history, it displays a powerful, embedded resistance to change. This resistance occurs despite ongoing and potentially serious shortages of skilled labour. It also persists in spite of a succession of major reviews and renewed calls for change.

Government reports continue to identify shortages for a long list of skills, such as tool and die making, machining, pattern making, instrumentation repair technicians and electronic repair technicians. The projected decline in the rate of labour force

EXHIBIT II.18

Active Apprenticeship by Trade Group Ontario (Thousands)



growth is expected to have particularly damaging implications for the high-skilled technical occupations. The shortcomings of our domestic system of formal apprenticeship training are intensified by dramatic declines in the number of immigrants designating high-skilled technical occupations as their intended occupation in Canada. Consequently, Ontario cannot rely on immigration to fill the growing gap in its available supply of skilled tradespeople.

Yet the existing formal system of apprenticeship training appears to be incapable of meeting the needs of the economy. Exhibit II.18 shows that the industrial apprenticeship group represents only 19.6 percent of total apprenticeships, a proportion which has varied little over the last five years. This is a source of considerable concern, given the central role that industrial skills will play in the course of future economic development.

In many ways, Ontario's industrial apprenticeship system serves as a classic study of our inability to adapt our training system to meeting the changing needs of industry and the economy in general. The training of qualified trades persons for the construction sector, on the other hand, has tended to follow a cooperative model in which employers and unions both take significant responsibility for training. This has generally not been the case in the industrial trades where industry and labour have left the management of the system to government.

A number of factors inhibit the apprenticeship system from functioning effectively. Some of the problems stem from inadequacies in the *Apprenticeship and Tradesmen's Qualification Act* (ATQA), which provides the legislative base for the system. The Act's outdated wage provisions, ratios and training guidelines have led to inflexibility in dealing with new and changing training needs. The Act and its Regulations also stipulate lengthy training periods — up to five years for some trades — before apprentices achieve journeyman status, and this contributes to a significant dropout problem.

The reasons for the failure to develop effective apprenticeship models in Canada can be traced to a number of divergent influences. In the period of rapid industrial expansion after World War II, the province and Canada as a whole were able to attract European trades persons in sufficient numbers to meet industrial requirements. As long as there was a plentiful supply of foreign-trained skilled labour available, there was little pressure to pay attention to the training system here, since the costs of training were borne by governments and employers in other countries.

The absence of direct market pressure in the formal training of apprentices with industrial skills and the availability of alternative sources of supply, whether through immigration or technical skills training, has inhibited the emergence of an effective industrial training culture. A significantly different result has been achieved in some of the construction trades, where alternative sources of domestic supply were constrained through state-imposed requirements for certification, coupled with the activity of unions and the 'hiring hall' system in that sector.

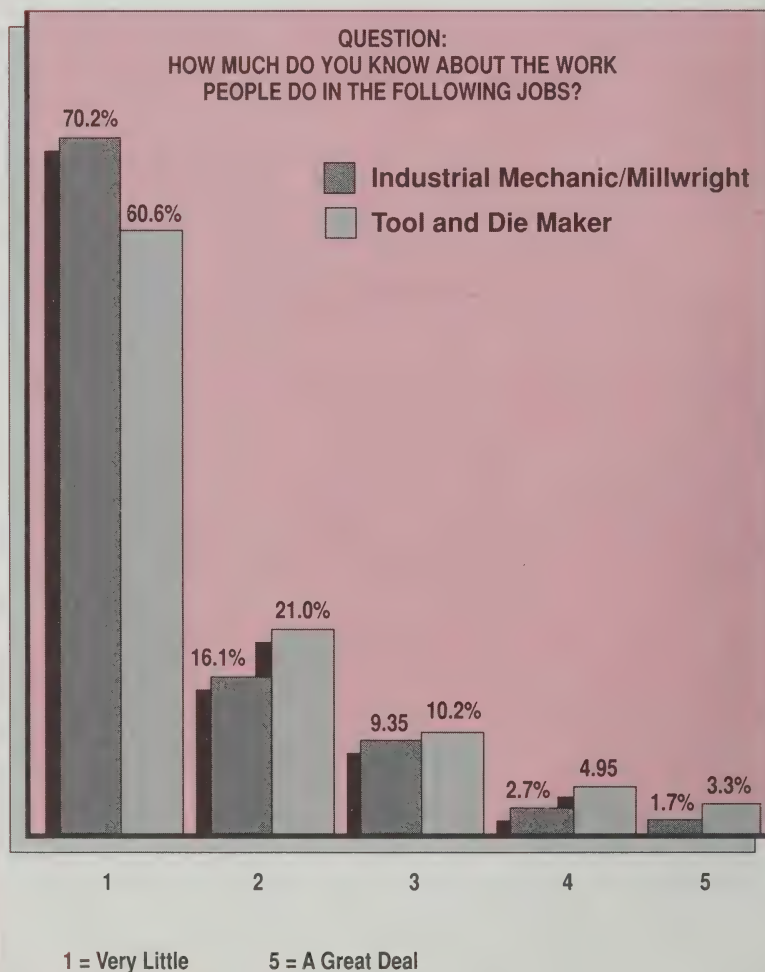
Two principle categories of trades are covered by the ATQA: the regulated trades and the non-regulated or employer-sponsored trades. The regulated trades are in turn subdivided into two groups. There are what are commonly referred to as the

compulsory trades, requiring a certificate of qualification and including most construction trades, some motive power trades, as well as barbers and hairdressers. The second subgroup of regulated trades currently includes 47 voluntarily regulated trades, wherein there is no legal requirement that a person hold a certificate of qualification or be registered as an apprentice in order to work in the trade. Included among the 47 are many of the industrial trades in which there are serious shortages.

The Council focused its attention on the middle group, the 47 voluntarily regulated trades, since they include a large proportion of essential industrial trades and the areas of critical skill shortages. The fact that these trades are "voluntary" means that the regulatory pressures exerted on the construction, motive power trades and hairdressers is absent for industrial trades, which may result in a downgrading of the status of such occupations.

EXHIBIT II.19

High School Students' Awareness of Skilled Trades as Careers



Source: John Walsh, Kitchener, Waterloo and Guelph Training Advisory Council, *Report on Skilled Trades and Career Selection*, April, 1989.

It is worth noting that in Ontario the average age of apprentices is 26 years. Apprenticeship follows secondary school, and access to apprenticeship is frequently related to seniority provisions of collective agreements. In the highly successful West German system, where schooling is compulsory to the age of 18, apprenticeship is actually part of the secondary school system, and the average age of apprentices is 16.

At the same time, the dropout rate for apprentices in Ontario is 50 percent, a disturbingly high level of attrition which is in part due to the inadequate income support available for apprentices. It also results from our tendency as a culture to discourage young people from considering careers in the industrial trades. An outdated system which starts apprenticeships too late and makes the program too long only exacerbates the dropout problem. Again, in West Germany the vast majority of apprenticeships last no more than three years, while most exceed four years here.

The apprenticeship system is also infused with concepts and terminologies drawn from another era and holding little relevance for young people. Terms such as "indentured", "journeymen" and "tradesmen" are decidedly out of tune with the world today. A study conducted for the Kitchener, Waterloo and Guelph Training Advisory Council in 1989 found that nearly 80 percent of high school students did not know what a "journeyman" is. A similar percentage stated that they are unlikely to become apprentices. Less than one in five had any idea of what tool and die makers, machinists, industrial instrument mechanics or millwrights did in their jobs (See Exhibit II.19).

Ontario's young people live and are taught in an environment that offers little incentive for them to investigate, let alone enter a trade. The usual market mechanisms of high wages, shortages and high demand appear to have little effect on their movement into the industrial trades.

Part of the problem also stems from the fact that the apprenticeship system is burdened by an excessive administrative workload. This dominates the activities of local Industrial Training Consultants who carry the system into the field. Registration, monitoring and accreditation of trainees are their primary tasks, while counselling, community liaison, training promotion and assessing employer needs receive considerably less attention.

Curriculum quality and content for the apprenticeable trades also suffer from fundamental problems. For instance, the Training Profile sold in the Ontario Government Bookstore as the guide for the training of tool and die makers is 300 pages long, but only 25-30 pages fit the current conception of what a tool and die maker does. An entire section deals with 'cyaniding', a process no longer in use for heat treating due to health and safety concerns. There are no references to any of the heat treating processes presently used in industry as a replacement for cyaniding. Terminologies and techniques such as CAD/CAM that are essential in modern technology are simply absent from the profile, and the importance of computer science to tool and die making is totally ignored in the description. Simply put, the training profile for this trade is hopelessly inadequate, despite the fact that it was last revised in 1985. Perhaps this is not surprising in view of the fact that the Provincial Advisory Committee (PAC) for the tool and die trade has met rarely in recent years. Part of the problem also rests with

the perception that the responsibility for keeping the training profile current rests with government, rather than the key stakeholders in industry and labour.

Curriculum problems for other trades appear to be equally severe. In some cases, the exams administered by the government focus on calculations, while the curriculum never mentions them. Some are metric, some not. (The government appears to have started to change to the metric system in the early 1980s and then abandoned the effort.) Moreover, many curricula and exams are not made available in French, and large parts of many are simply outdated.

Another critical factor inhibiting apprenticeship is the limited access to the trades. Employers act as gatekeepers to entry into an apprenticeship training program. However, few current programs allow an individual to complete the in-school portion of training prior to seeking employment as an apprentice. Entry to the training system is considerably more difficult for the employment disadvantaged, people from different cultural or racial backgrounds, those with a lower degree of language fluency and women. A recent report of the provincial Task Force on Access to Professions and Trades also noted serious problems with the process by which a foreign-trained trades person may gain advanced standing in the apprenticeship program for their prior training and experience.

The insufficient levels of financial support for those undertaking training as an apprentice may often create an insurmountable barrier. Apprentices may receive payment from the federal government under Section 26 of the *U.I. Act* or under the *National Training Act*. Funding under the former is limited by the complex set of eligibility criteria. Equally problematic is the inadequate level of financial support offered to apprentices under this section. Apprentices who do not qualify for financial support under the *U.I. Act* may be eligible under the *National Training Act*, but unfortunately this does not provide them with an adequate level of financial support either.

Low levels of income support, combined with the excessive length of training periods, contribute to the high dropout rate in the apprenticeship program. Ontario has long advocated changes to the Canada Training Allowance to allow more funding to retrain those who are employed or recently unemployed and increases in income support for apprentices during their in-school training. The Council urges Ontario to renew its appeal for adequate income support for apprentices. The provincial government should work with Employment and Immigration Canada to ensure the provision of a comprehensive system of income support for all individuals undertaking long-term apprenticeship training. An Apprenticeship Board reporting to the OTAB could spearhead this effort.

Despite these shortcomings in the apprenticeship system, there have been some recent efforts to effect reform. New approaches, like the School-Workplace Apprenticeship Program (SWAP) described in the Education Section of this report, attempt to integrate apprenticeship training with the high school curriculum. Given the recent start-up of such programs (September, 1989), no estimate of their effectiveness is yet possible. Another promising initiative involves community

colleges in joint programs within industry to create more flexible options for apprenticeship, including day release, special training centres on company premises and programs in which theory and practice are both delivered in the workplace.

The Trades Updating Program, established in 1987 as part of the Ontario Training Strategy, is another relatively recent initiative. This program offers upgrading through short term in-school training delivered primarily, but not exclusively, by the Colleges of Applied Arts and Technology. It is targeted to journeymen whose skills are being rendered obsolete, either due to changes in a job affected by technological advance or because they have been laid off and want to get back into the field with updated skills. Both employed and unemployed journeymen are eligible, but those journeymen taking advantage of the program tend to be in the construction, automotive and electrical trades.

While this program has considerable merit, a serious flaw in its design impedes its effectiveness. The operation of this program is usually triggered by individual employee motivation; thus, individuals seeking upgrading must find out about the program, determine if they are eligible to participate in it and if they are part of a sufficiently large group for the program to be offered. Funding provisions are very specific and limited, particularly since there must often be a minimum number of participants for the program to be offered. The threshold is 10 participants, but courses may be funded for fewer than 10-12 participants on a pro-rated basis. The program can be and on occasion is triggered by employers as well: Inco, Algoma with Sault College, Ford and GM are some examples. More publicity for this program would greatly improve its utilization, but MSD has appeared loathe to provide this.

Commencing in 1987, a complementary skills updating program was introduced to provide upgrading courses free of charge to over 5,000 technologists and technicians a year. The need for this program was identified as it became evident that many skills were becoming obsolete within three to five years of graduation due to the rapid pace of technological change. Preliminary evaluations indicate that the program is meeting an important need. The program has already demonstrated its capacity to mount a wide range of technological training across the province. Enrolment levels are high, as are retention levels, and the training being provided is relevant to identified labour market needs. In addition, the program has encouraged participating institutions to work with local industries in developing courses and has allowed these institutions to expand and upgrade their own technological knowledge base.

Both the Trades Updating and the Technicians/Technologists Updating Programs are worth reinforcing and expanding under the direction of the OTAB. Particular attention should be paid to overcoming the existing problems with access to these programs, however.

Regardless of the virtues of these recent initiatives, the industrial apprenticeship system in Ontario continues to suffer from a complex set of problems. A recognition that tradespeople are becoming technologists has been lacking. Markets have not induced young people to enter the trades. They also have not prompted the major stakeholders to focus on fulfilling their own needs for trained workers. Furthermore, government has not

adapted the system to modern needs, both in terms of structure and consultation methods.

The training and apprenticeship system we now have is one with which almost all the stakeholders appear to be dissatisfied, a system that everyone wishes to reform, a system that appears incapable of meeting the demand for skilled workers. Ontario can no longer jeopardize its future economic development because of an outdated approach to training and apprenticeship in the industrial trades. There is an urgent need to overhaul this component of the apprenticeship system, but this must be carried out in the context of our broader reform of the training system through the Ontario Training and Adjustment Board proposal.

THE COMPARATIVE EXPERIENCE

127

The experience of other countries indicates that job-related forms of training are critical to sustaining the adaptability and international competitiveness of individual economies. National commitments and public policy establish the overall context within which training is carried out in both the public and the private sectors. In many respects, each country's distinctive approaches reflect broad differences in its political make-up. Consequently, no one approach can be wholly transferred to another country. Nevertheless, there is much to be learned from studying the experiences of other nations, as the discussion that follows attempts to demonstrate.

THE U.K. LEVY/GRANT APPROACH

One mechanism that is frequently recommended as a means of overcoming the problem of underinvestment in training is the levy/grant system. In fact, the Federal Advisory Council on Adjustment has recently proposed such a training mechanism for Canada. The levy/grant is a tax-based instrument used to finance skills training, usually on a sector by sector basis. It is based on the principle of raising revenue for skills training through a payroll tax, rather than from general revenues. These tax revenues are then redistributed as training grants to all firms that undertake appropriate training activities. Its primary purpose is to increase the total level of investment in training, and it does this by trying to ensure that all firms which benefit directly from training pay for part of its cost. The system is effective in this goal to the extent that it distributes the costs of training more evenly among all who may benefit from it, thus eliminating or partially overcoming the poaching or "free rider" problems.

One of the most closely studied levy/grant systems is that adopted by Britain in 1964. Under the British system, bipartite industrial training boards (ITBs) were established for the purposes of developing and implementing training programs in their respective industrial sectors. The new system had three basic objectives: to improve the quantity of training; to improve the quality of training; and to distribute the costs of training more equitably among those employers who trained and those who did not. The levy/grant system was intended to overcome the problem of poaching in particular and to raise the overall standard of training in British industry.

The ITBs were authorized to establish the level of the levy for their industry, and set the training standards for purposes of the grant. They were financed by a statutory levy from employers, which paid for the Board's administrative costs and funded the

grants to employers who provided training to the approved standard. However, the discretionary authority vested in the individual ITBs resulted in wide discrepancies in the levy rates set by the various Boards.

By the early 1970s, a number of obvious problems had emerged with the system. One involved the exclusion of smaller firms, many of which experienced difficulty in qualifying for grants because the training they provided was usually informal and on-the-job, in contrast to the high priority given by the ITBs to craft training, management training, or the employment of full-time training officers. Furthermore, because it was difficult to measure reliably actual training costs, some firms were able to take advantage of the system by distorting their training schemes so as to get back more grant than they had paid in levy. They were able to provide training activities that satisfied the Boards' criteria, even though there was no real need for the training. In contrast, those firms that carefully trained to meet their real requirements sometimes received little in the form of grants because their specialized training program may not have fit the formal criteria set by the Boards for the whole industry.

The British government attempted to address these problems in 1973 by exempting from the statutory levy option small firms and also those firms that demonstrated that their training arrangements were adequate to meet their own needs, and by limiting the amount of the levy in any industry to a maximum of 1 percent of payroll. In addition, the Manpower Services Commission (MSC) was created to assume the administrative and operating costs of the ITBs, thus transferring them from industry to government. The Commission assumed responsibility for supervising the ITB's plans, thus effectively reducing their scope and free rein.

A review of the ITBs in 1980 led to the abolition of seventeen of them in the belief that superior results could be achieved by voluntary bodies at less cost and with less bureaucracy. Responsibility for training was effectively returned to the hands of employers. Finally, in 1987, the Manpower Services Commission itself was abandoned.⁹

Britain's training strategy reflected a major attempt by its government to reproduce the success of Scandinavia's "active labour market policies". This attempt to re-orient labour market policies coincided with a sharp and prolonged contraction in the British economy. The result of this contraction was a substantial increase in youth unemployment and in long-term unemployment. Inevitably priorities shifted to these problems. The efforts of the Industrial Training Boards also contrasted with the policy orientation of the British government in the latter part of the decade. As a result, the British government backed away from the ongoing needs for training and adjustment for those who are currently employed.

⁹ The preceding discussion draws on Craig McFayden and Robert A. Marshall, "Models for Increased Private Sector Financing and Labour Market Development," Background Paper for Vision 2000: A review of the Mandate of the Colleges of Applied Arts and Technology Toronto: Ontario Council of Regents, 1990.

The British experience suggests a number of lessons for Ontario:

- While companies must be able to tailor training program to meet their specific requirements, it is essential that public institutions play a key role in delivering most training. When this is not the case, the result is frequently artful accounting to capture funding for normal on-the-job training which is “dressed up” to conform to funding requirements.
- The best check and balance in the training system is the commitment by trade unions and employers to the co-management of training. Bureaucracy and elaborate regulation cannot substitute for this commitment.
- Small business and their employees will tend to lose out if their training needs are wholly governed by the same processes and structures as those applicable to large employers.

JAPANESE FIRMS AS LEARNING ORGANIZATIONS

In sharp contrast with the problems experienced by Britain, the Japanese approach to training and human resource development has become renowned in recent years for its articulation of explicit links between training and economic success. In Japan, training is seen as a lifelong pursuit, rather than something that begins and ends with the development of initial job skills. Japanese firms thus place strong emphasis on training for the already-employed to help them adapt to changes in the country's industrial structure, to respond to technological innovation and to enjoy an extended worklife.¹⁰

The distinctive features of the training system that has evolved in Japan can be explained in terms of the employment system that is characteristic of the nation's largest firms. Within that employment system, there is a decided preference for recruitment straight from school or university and there are strong disincentives against dismissing workers for reasons of redundancy. The wage system is based principally on seniority increments within categories defined by educational qualifications. Wage bargaining occurs largely on a firm-by-firm basis between managers and all-encompassing enterprise unions. A significant amount of wages are paid out in the form of bonuses that vary markedly with the profitability of the firm.

Within the context of this employment system, private firms play the principal role in developing and implementing training, and labour plays a subordinate role because of its relatively weaker position within Japanese society and politics. However, labour relations peace has been won as a result of the pervasive commitment to lifetime employment among the firms that comprise the primary labour market. (There is also a secondary labour market of smaller supplier firms where employment security is not practiced). There is in this sense no external market for skilled workers among the large firms that represent the core of the Japanese economy. The workers expect lifelong employment in return for their loyalty, intelligence and hard work for the firm. This commitment also ensures that private firms regard the costs of training as an investment in their future competitiveness and profitability. Japanese firms have little

¹⁰ The description of the training experience in Japan, West Germany and Sweden draws in part upon material in Armine Yalnizyan and David Wolfe, *Target on Training*, Chapter IV, Social Planning Council of Metropolitan Toronto, 1989.

interest in vocational courses because they prefer to avoid early specialization in their labour force; they tend to recruit workers into their organization, not into specific occupations.

The general education system in Japan lays the basis for all subsequent in-firm training. Emphasis in education is placed on developing "the whole person" rather than specialized skills. Japan's highly skilled labour force receives its foundation learning during the compulsory schooling period (up to the age of 15), when students achieve proficiency in core mathematical and scientific subjects. More than 94 percent of students stay on beyond the compulsory age to further their employment prospects. The high standards attained at the compulsory level make possible more advanced vocational preparation at a wide range of full-time secondary technical and commercial schools for students aged 16-18. All students continue to study mathematics and sciences at this level as part of non-compulsory, full-time schooling. Subsequent training provided during the course of employment builds upon the foundations laid during the full-time school career.

One of the important institutions within Japan's formal education system is the vocational high school, which offers specializations in areas such as machinery, electricity, electronics, architecture and civil engineering, as well as in some business-related courses. There are also 62 Colleges of Technology that offer training courses at an intermediate level between the high schools and the universities. Formal vocational education is a legacy of the early postwar period when Japan faced a different set of problems. Today, the vocational system's role is overshadowed by that of the mainstream school and university systems, which provide a more general education.

Access to the most qualified and privileged of jobs is largely determined by attendance at a university. The school one attends is all-important in determining success in being hired by a major firm. Within the universities, the arts (especially law) and science (especially engineering) streams enjoy equal prestige. In general, however, most courses do not offer a high level of vocational training. The first two years of most degree courses remain general in content and the system actively discourages early specialization. Its primary role is to inculcate prospective employees with the basic skills and values desired by their future employers. Employers seek workers who will be able to cooperate with others and learn quickly. They hire at all levels based on attitude and general level of educational attainment. Once hired, the firm trains the worker. The specific vocational skills learned are not considered transferable to other employers.

Virtually all vocational training in Japan takes place on-the-job, which is the most striking feature of the Japanese system. Japanese firms are overtly structured as learning organizations. Inspiring subordinates to continue their efforts at self-improvement is deemed to be an important part of any supervisor's job. This approach to training involves group work, quality control circles, organized job rotation, suggestion schemes and targeting of multiskilled work — approaches which would not necessarily be recognized as training in Canada but are viewed as essential to the development of skills and organizational flexibility in Japan. Because much of Japanese training occurs as an integral part of the work process, its costs are largely invisible. This may explain why Japan often fairs poorly in international comparisons of the size of its training budgets or its formal training

schemes. However, actual training costs are often much higher than is apparent.

Recent evidence indicates that the importance of these invisible forms of training has become even more pronounced since the recession of the early 1980s. The role of the "key worker" in the efficient transfer of skills is also being emphasized more strongly. The key worker, a highly trained individual who is also trained to teach, assumes responsibility for passing on knowledge and new techniques to other workers in the group. Key workers play a critical role in the introduction of new technologies to the firm. They receive intensive training from the manufacturer of new equipment, on-the-job training during the commissioning of the equipment and then subsequent training from the production engineers. These key workers then assume responsibility for passing along their knowledge to other members of the workforce during their on-the-job training.

Training by technical and managerial staff also occurs more frequently in Japanese plants than in many European or North American factories. Its importance has tended to increase as the pace of innovation accelerates. When a new product is being introduced or a production system reorganized, engineers and work study experts in the firm hold formal sessions to explain the changes and instruct workers in the new aspects of their work tasks. This process extends to a firm's subcontractors as well.

The traditional reliance by Japanese firms upon on-the-job training has been supplemented by off-the-job training as technology and organizational systems have become more complex. Seminars and conferences to provide information updates, new market information and general managerial courses are becoming common. The people sent to these seminars are strongly encouraged to disseminate the information they acquire more widely throughout the firm. In addition, a large amount of off-the-job training currently takes the form of correspondence courses.

The Japanese experience suggests a number of insights for Ontario. The underlying reason for the strength of the in-firm training system practised in Japan is that the employment security model allows firms to invest confidently in their people. This suggests an important link between adjustment and training policy. Training policy has usually been seen as a means to promote more efficient labour market adjustment. But adjustment policies that encourage firms to retain labour through economic cycles can also address the training deficit by removing one of the disincentives to investment in training.

The Japanese training model accentuates the polarization of the Japanese labour market. Workers in the core sector enjoy a high degree of employment security and benefit from investment in training by employers. Workers outside this core have little security and only limited access to training. One of the dangers of a training policy that is fixated on core workers is that it entirely ignores the equity dimension of skills training.

What has been called a "training culture" is an important element of the success of a Japanese training strategy. This training culture admittedly is founded on the needs of the core sector and does not extend widely outside that core. Nevertheless, it is clear that a successful training strategy in Ontario will have to strive for the development of a comparable training culture, albeit one that is more inclusive.

The West German system of education and training is characterized as a “dual system” in two respects: responsibility is shared between the federal government and the länder or states, and vocational training occurs both in educational institutes and on-the-job. Overall responsibility for publicly-run education, including vocational schools, rests with the states or länder, whereas responsibility for vocational training on-the-job rests exclusively with the federal government.

At the heart of West Germany's approach to labour market policy is its comprehensive vocational training system. Matters relating to vocational education and training rest with the Federal Ministry for Education and Science, which has central responsibility for the basic questions of vocational training policy, and the Federal Institute for Vocational Training. This institute advises the federal government on training policy, collaborates in the preparation of training ordinances that govern the vocational training programs and maintains and publishes an index of skilled occupations. As with most such bodies in West Germany, the membership of its central committee is composed of representatives of employers, workers, the länder and the federal government itself.

Nearly two-thirds of secondary school leavers in Germany take vocational education training. Upon completing their secondary school education, German students can choose to follow one of two streams: one involves choosing a technical trade that will lead to further specialized vocational training in upper technical schools or universities; the other combines on-the-job experience with one or two days of associated classroom education per week. Students can choose to follow an approved training curriculum in one of 439 apprenticeable trades. The training period varies from two to four years. The content of the training program is determined by several joint commissions in the Federal Institute for Vocational Training.

The on-the-job portion of the training is controlled by representative authorities, such as the Chambers of Industry and Commerce and the Craft Chambers, which supervise the training given in enterprises and approve the tests and examinations. The training takes place in some 450,000 approved training firms, each of which has at least one fully qualified trainer. Training in the workplace is supplemented by instruction in firm-sponsored workshops, as well as by in-firm instruction. In the large firms, in particular, it is becoming more difficult to provide sufficient time for instruction at the place of production itself. Consequently, these firms have established their own training workshops to fulfill their legal obligations under the *Vocational Training Act*. Some of the larger firms have also added their own in-firm instruction to supplement training, especially for skilled occupations.

The in-school portion of the training, as well as the rest of the educational curriculum, is controlled by the länder. This part of the program is designed to impart both general and specialized knowledge relevant to students' vocations. Emphasis is placed on the theoretical foundations of science and technology, mathematics and the technical aspects of the occupation they are training for. In addition to the direct learning in the schools, trainees also attend special school-sponsored workshops which provide instruction in occupational skills, supplement on-the-job training and provide

practical demonstrations of scientific or technical knowledge. At the end of the training period, trainees must pass an examination, after which they receive a recognized diploma of vocational achievement. Overall, the training emphasizes core skills and the development of healthy work attitudes in terms of teamwork, decision-making, creativity and adaptability.

Students participating in the dual system enjoy the status of apprentices and receive allowances negotiated by unions and employers. Both unions and employers share a strong commitment to the vocational education system. Employers regard their involvement in the system as very valuable because it gives them an opportunity to influence the development of future generations of the labour force as they move from school to work. For their part, the unions are committed to the system because they value the high level of training and skills that it bestows on their future members.

Training within the German system does not stop with the completion of formal apprenticeship training. It is complemented by continuing adult vocational education and training within firms, where the concept of “the learning company” is viewed as critical for economic success. Adult vocational training often involves bringing workers up to date on scientific, technical and organizational developments. It is mostly firm directed, but other institutions, such as the training establishment of the Chambers of Industry and Commerce and the training centres of the trade union federation, are also involved. In some leading companies such as Bayer, Mercedes-Benz and Siemens, up to half of all employees are involved in programs of skills upgrading or self-development.

The praise heaped on the West German training system must be qualified. Questions have recently been raised about the wisdom of the German system’s emphasis on training for rigidly defined occupations in an era of rapid technological change and early skill obsolescence. Recognition of these limitations has led recently to experiments in bringing competence in the use of new technology to the adult working population. One method of dealing with the skills obsolescence problem has been to decrease steadily the number of skilled occupations. This process of concentration has become a deliberate aim of vocational training policy, which has now begun to concentrate on giving modern workers a wider qualification profile.

There are certain aspects of the West German experience that are relevant to policy discussions here in Ontario. The effectiveness of the West German training system results from the involvement of all players — both levels of government, employers and trade unions. Far from being a holdover from an earlier period of economic development, the system of apprenticeship and occupational certification has shown that it can play an important role in promoting skill-based economic restructuring. Furthermore, the significant commitment of resources — both financial and human — to vocational training increases its prominence and status.

Another approach to training that warrants closer examination is the active labour market policy employed in Sweden. This policy has been shaped by the high level of unionization among Sweden’s labour force and the climate of cooperation during most of the postwar decades among labour, industry and government. The trade unions’ influence over both

SWEDEN'S ACTIVE LABOUR MARKET POLICY

macroeconomic and labour market policies has led to a national emphasis on maintaining full employment.

The hallmark of this approach has been an active labour market policy which includes programs to promote either job creation where labor demand is too low or the readjustment of training to meet changes in supply. Overall responsibility for the direction of labour market policy, including the employment service and vocational training, rests with a tripartite body, the National Labour Market Board (AMS), which operates through twenty-four county boards and 280 employment centres. Although they are ultimately answerable to the Ministry of Labour and the Cabinet, both the AMS and the county labour boards enjoy a great deal of independence in the implementation of labour market policy.

A recent reorganization placed greater emphasis on decentralization, giving the county boards more autonomy to tailor policy to their local needs. The county boards traditionally made their own decisions within their respective spheres of responsibility, but they also reported to and received direction from the AMS. Many decisions that were made centrally by the AMS in the past are now delegated to the county boards, which have also been allocated funds of their own to purchase training.

Actual training programs are run through the Labour Market Training Centres (AMUs). The new AMU organization, established in 1986, inherited responsibility for organizing employment training courses. The AMU was also given a mandate to market training programs in direct competition with other providers of training. It is required to operate on a self-financing basis and thus receives almost no direct government funding. The AMU group consists of a small central board of directors, 25 regional boards and about 100 local centres. As is the case with the AMS, representation on both the central and regional boards is structured in a tripartite fashion. The AMU group sells most of its training programs to the county employment boards, but is also moving in the direction of marketing a growing proportion of these programs to private companies.

On average, nearly 130,000 people or 3 percent of the labour force undertake some form of employment training each year through the AMU. Three main forms of training are offered through the system. The largest and most important is training for the unemployed, which consists of specially designed courses offered through the AMUs, with both instructors' fees and allowances for trainees funded by the AMS. A second form of training offered through the employment service supports jobless adults in taking courses deemed to be vocationally relevant through the regular school system. The third form of training takes the form of subsidies provided by the employment service to firms undertaking internal training programs for their own employees or through an external training provider, often an AMU centre. This form of training is subject to a rigid set of conditions, including an agreement between the company and union over the form and nature of the training. Employees receive their regular pay while they undertake the training.

The primary recipients of training through the centres include immigrants, young people, women returning to the labour market and workers who have lost their jobs through plant closures or who need retraining in order to qualify for new jobs.

The training provided by the AMU centres is geared to an upper secondary school level. The courses range in duration from a few days to much longer periods that allow for complete occupational training. Although the basic courses are designed by the central AMU board, the regional boards have considerable discretion to modify the courses to meet their own needs, as well as to develop experimental courses of their own. In total, the AMUs offer nearly 400 courses that have been designed in consultation with business and labour.

Most courses are based on a modular system that allows people to enter at the appropriate skill level and facilitates individualized training. Training is provided on the basis of continuous admission, avoiding unnecessary delays in start-up time for persons wanting to enter the programs. The modular system also builds flexibility into the training curriculum, allowing courses to be tailored to changing occupational trends and labour market needs.

Responsibility for appraising the respective training needs of the local regions rests with the county employment boards. In fulfilling this responsibility, they take into account the existing labour demand within the local employment service, as well as information available through the employment offices concerning unemployment and the needs and prospects of the unemployed. In addition, they must take account of the training and education already provided by the regular educational system. Once the local training needs have been determined in this fashion, training is purchased from the various providers, principally the AMUs. Ongoing consultation between industry and the training centres helps the AMU centres stay abreast of current technological developments in industry and provide appropriate training.

Since 1984 a major boost has been given to in-plant training through the creation of renewal funds, which require companies to place a percentage of their net profits into a fund for research and training. Under the enabling legislation for these funds, all companies with profits above a certain level since 1985 have had to put 10 percent of them into a fund to finance further education or training, as well as research and development geared to the company's needs. The exact disposition of the funds must be agreed to by employer and union representatives. In some respects, the scheme overcomes the disadvantages of mandated or subsidized training by placing the onus for it directly and jointly on the company and the union.

Even without the stimulus provided by the renewal funds, Swedish companies have traditionally devoted a high proportion of their resources to training and developing the skills base of their workforces. Most large firms have departments responsible for providing training for the company workforce. Companies are generally responsible for financing such courses, except where they qualify for labour market funding. Employees of small companies that lack the resources to provide training on their own often participate in courses sponsored by employer or trade associations or attend AMU programs on a fee basis.

Sweden's experience in the recovery from the recession of the early 1980s has led to another innovation in labour market policy. In every previous economic recovery, the employment service had encountered severe bottlenecks in the labour market. In preparation for this one, the AMS launched an experimental program to provide skills upgrading to 6,000 engineering

employees. Strong emphasis was placed on skills required to operate and maintain technologically sophisticated machinery. Under the terms of the program, the employment service paid for the instruction fees and a large proportion of the trainees' wages.

The overall success of the program led to the implementation of bottleneck training as an ongoing feature of training policy. The thrust of "bottleneck training" is to overcome existing skill shortages in the labour market and improve capacity use. It helps employees in a firm move into strategic vacancies in the enterprise, thus assisting it to increase production and create more jobs. Bottleneck training may become increasingly important as Sweden responds to the anticipated skill shortages arising from rapid technological change.

Although Swedish labour market policy continues to reflect the strong position of the trade unions and the Social Democratic Party in the postwar political economy, it has undergone a subtle shift during the 1980s. In response to the rising budgetary deficits and the excessive commitment to job retention during the recession years of the 1970s and early 1980s, current labour market policy has accentuated flexibility, in-plant training and structural adjustment to technological change. Furthermore, the decentralization of the AMS administrative structure and the creation of the AMU group with a mandate to be self-financing and competitive with private training providers reflects a shift away from the more bureaucratic model characteristic of the conventional welfare state.

There are many aspects of the Swedish experience that are relevant to Ontario:

- Flexibility in work organization at the level of the enterprise is achieved in large measure by providing security at the societal level through generous wage loss protection and extensive retraining benefits. Rather than reducing flexibility at the enterprise level, as is sometimes alleged, these policies clearly contribute to flexibility.
- Economic restructuring was, to a large measure, skill-based; that is to say, training policy was used to shape economic restructuring, not merely to adjust to it.
- As is the case in West Germany, there is a strong commitment to active labour market policies by both employers and trade unions and a prominent role for both actors in the formulation of policy.
- Important as skills policy was to Swedish restructuring, Swedish policy did not rely solely on skills policy. The renewal funds played an important role in restructuring as did conventional macro-economic policy, especially monetary and exchange rate policy.

FORGING A NEW APPROACH TO TRAINING

137

The problems with the existing training system in Ontario are manifold. The evidence collected shows a significant underinvestment in workplace training within the province. Some would say that this supports the case for government intervention to compensate for what industry is not doing. Yet the past record of public policies and intervention in this area suggests that solutions may be found in less government and more private sector action. It is time to mark a significant departure from the policies and practices of the past.

Our examination of the experience in other countries suggests that training proves most effective when it is based upon a strong commitment by firms and workers. A new approach to workplace training in Ontario will need to be focused on fostering that commitment. We must fashion a made-in-Ontario solution that fits our history and institutions by building on emerging models of workplace training in Canada.

EMERGING SECTORAL MODELS

In looking for models of a workplace training system that could succeed in Ontario, the Council has found several interesting sectoral initiatives already underway. Recent developments in Canada suggest there has been some movement away from an individual company training model towards the evolution of more collective and cooperative mechanisms for the provision of training.

Several bipartite sectoral initiatives have been launched to deal with problems of industrial restructuring, training and labour force adjustment. There are initiatives at differing stages of development taking place in the steel industry, electrical/electronic manufacturing, shipbuilding, aerospace, west coast forestry, food processing and construction. The two most formalized initiatives are the ones in the steel industry and in electrical/electronic manufacturing.

The sectoral level may be the most effective way to approach joint labour-management training initiatives. It is at this level that most of the restructuring, training and adjustment issues must be confronted. This is also the level of the economy where the industrial leadership (both management and labour) have the knowledge of the problems facing the industry, the backing of their own organizational resources and a vested interest in solving the problems.¹¹

The current initiative in the steel industry, the Canadian

¹¹ Peter Warrian, *Trade Unions and Labour Market Planning: The Case for Sectoral Regulation*, Paper presented to a seminar at University College, University of Toronto, March 17, 1989.

Steel Trade and Employment Congress (CSTEC), brings together the major steel manufacturers and the United Steelworkers. This sector has been preoccupied with trade issues, principally with the U.S., and the problem of labour force adjustment in an industry facing declining employment levels. The steel trade wars of the late 1970s and early 1980s coalesced the interests of the producers and the union, and the parties reached agreement on most of the issues affecting steel trade.¹²

Simultaneously, the effects of the recession in the early 1980s created significant labour force adjustment problems, resulting in a downsizing in employment by 30-40 percent, much greater than the level experienced in the U.S. Confronted with the urgent problem of relocating and retraining displaced steelworkers, the Employment and Adjustment Committee of CSTEC developed a program to provide joint labour-management teams for the sites of layoffs and shutdowns, form layoff committees and provide special adjustment benefits to laid-off workers. (The operation of this program is discussed in more detail in the labour adjustment section of this report).

What facilitated joint action in the steel industry was the extent to which management and labour each identified strongly with at least one of the pressing issues — trade and labour force adjustment. The fact that the sectoral initiative provided something of benefit to each side was also critical for its success.

In the case of the electrical/electronic manufacturing industry, the issues leading to the formation of a sectoral training solution differed significantly. The industry experienced significant job losses between 1978 and 1983, but subsequently has grown at twice the rate of general manufacturing in Canada. By 1987, employment levels had surpassed their previous peak. However, the net impact of the restructuring experienced in the industry has been a significant change in the occupational and skill mix. Key segments of labour and management share a perception that the central issue confronting the industry is to retrain and redeploy the workforce to sustain the current expansion. Consequently, the prime concern is how to adapt for growth, rather than adapt for downsizing as was the case in the steel industry.

As a result, the Joint Human Resources Committee of the electronics industry has launched a sector-wide training fund that includes provision for vocational training and upgrading, paid educational leave and union-based education programming. This Sectoral Training Fund will in fact be a series of funds — one per participating workplace. Each workplace fund will be self-contained and will consist of the contributions from the employer and the participating workers at that workplace, plus the matching government funds leveraged by their contributions. Employers will contribute .25 percent of payroll directly. A further .25 percent will be identified as an employee contribution but will be paid in the manner of "paid educational leave" provisions found in many collective agreements. The governments of Ontario and Canada (CEIC) will match this .50 percent of payroll with another .25 percent each, bringing the total training funds to 1 percent of payroll. A Sectoral Training Council will be established to set broad policy guidelines for the operation of the Fund and to administer the Fund through a secretariat on a daily basis. In addition,

¹² Peter Warrian.

management and workers will form Joint Workplace Training Committees which will be responsible for the Fund at the local levels. Their mandates will include making recommendations to the Sectoral Training Council about the training to be financed by the Fund at each workplace.

Although somewhat different in structure and operation from the two previous examples, one other model warrants attention: the Ontario Training Trust Fund Program. The Training Trust Fund (TTF) concept was introduced to Ontario by unions of skilled tradesmen in the construction industry. A TTF is a legal trust fund, the proceeds of which are dedicated to the training of participating union members. The building trades pioneered the use of TTFs as a form of collective training for their members because of the prohibitive costs of training and upgrading for smaller contractors who employ most construction workers.

In 1985, the provincial government introduced the Ontario Training Trust Fund Program as a three year initiative designed to subsidize TTFs whose revenue was exhausted during the recession and to stimulate the creation of new TTFs. The program offered new and already established TTFs a subsidy of one-half of total employer and employee contributions to a maximum of \$100,000. The original program was undersubscribed and did not create a significant number of new TTFs. Consequently, the government announced a revised program in 1987 that allowed the TTFs a longer period of time to accumulate funding to match the provincial incentive.

The training trust funds must be dedicated to employment-related training and retraining, over and above existing efforts. The focus of these additional training efforts is new skill development, upgrading of existing skills, training to enhance the employability of individuals facing redundancy and training to facilitate adjustment to technological change. Before a trust fund can be considered for program funding, it must have the agreement of the employer or employer association as well as the employee bargaining agent, union, employee association or a majority of the employees in the organization covered by the training trust. The fund must be administered by a board of trustees, consisting of an equal number of employer and employee representatives. In 1989, there were 37 such trusts in existence in the province, mostly in the building trades, with almost \$5.5 million in contributions.

THE ONTARIO TRAINING AND ADJUSTMENT BOARD

These cooperative efforts to enhance training and labour force adjustment are consistent with the successful approaches in other countries and represent potential models for a new provincial strategy. The creation of a more knowledgeable and highly skilled workforce must be the prerogative and responsibility of all participants in the labour market. In pursuit of a more highly skilled and adaptable labour force, and to promote better cooperation in achieving that objective, the Premier's Council recommends the creation of the Ontario Training and Adjustment Board.

RECOMMENDATION 19:

The Ontario Training And Adjustment Board (OTAB)

Ontario should establish an Ontario Training and Adjustment Board. This board would be a bipartite management and labour authority to provide strategic direction for the funding and delivery of workplace training and adjustment activities in the province.

The creation of this independent decision-making authority to guide the province's workplace training effort signals a major shift in philosophy and focus. The creation of the Ontario Training and Adjustment Board breaks with past approaches to training policy. It would transfer responsibility for Ontario's workplace training strategy out of government ministries to the labour market parties where the demand originates, the decisions are needed and the solutions are delivered. It would also delegate to high-level management and labour representatives direction over a series of functions previously managed by government. The OTAB, through its associated training committees, will determine the needs and requirements for workplace related training in the province, ensure that delivery systems are adequate and allocate much of the training monies spent.

The OTAB should not be responsible for the delivery of training. The existing system of public training providers led by the community colleges will still be a major source of training, as will the private training sector. The OTAB's sectoral and regional committees (described below) will be major purchasers of training services and will influence the quality of that service as any intelligent buyer does.

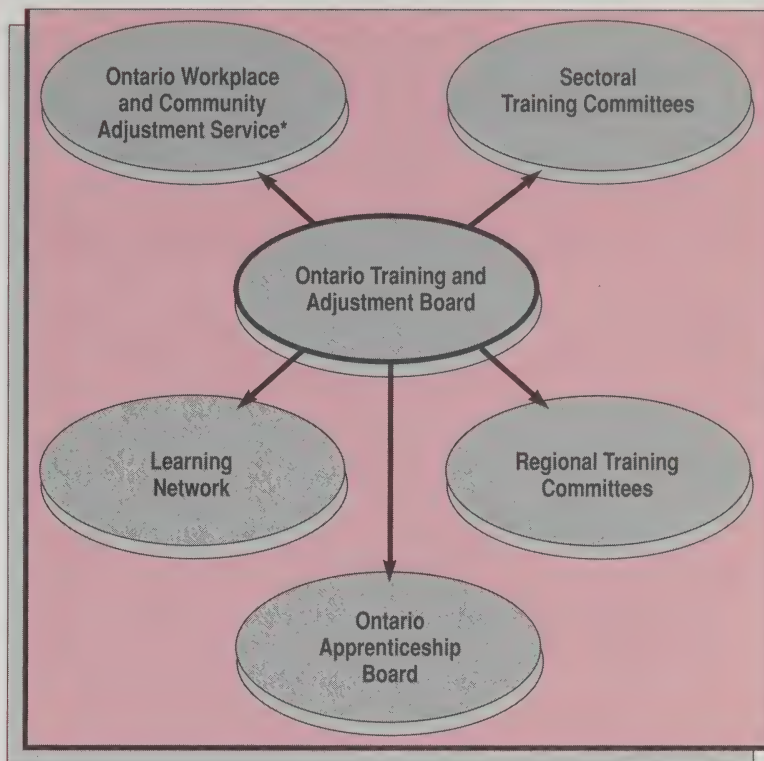
Government would maintain broad policy responsibility for federal-provincial relations and continuing leadership in employment access and basic skills programs. These fundamental roles of government should not be ceded to an external agency. At the same time, the need for effective consultation and supportive working relationships will be critical to making the OTAB a success.

The creation of the OTAB will attempt to address the failings that have been identified in the current training system. Most critically, it will ensure that responsibility for training policy rests with the labour market parties who have the most at stake. All public and private sector employers and workers will be the OTAB's constituency. Placing responsibility for training in the hands of the OTAB will ensure that the concerns and needs of these employers and workers become the driving force behind the development of provincial training policy.

The Basic Components

No single institutional or policy innovation can address the multiplicity of issues troubling the province's training system. The OTAB is not envisioned by the Council as a single response to a complex set of problems, but rather as the centerpiece of a larger, more comprehensive structure for approaching industry-based training. Thus, the proposed OTAB will underpin a new provincial training structure that will be made up of:

- Sectoral Training Committees
- Regional Training Committees
- The Ontario Apprenticeship Board
- The Learning Network
- Adjustment Services



* Described in the labour adjustment section (Section III)

The roles of and interrelationships among these elements of the new training structure require some explanation. Exhibit II.20 offers a visual interpretation of that structure.

The Role of The OTAB

The OTAB will play a central role in the formulation and execution of Ontario's proposed training structure. Its credibility and effectiveness will depend on several factors.

First, **equal management and labour representation** on the Board is essential. This equal representation should be reflected in the Board's co-chairs, one of whom will be drawn from the management and the other from the labour movement. The Board's directors should be limited to a manageable number (no more than five each) of management and labour leaders.

Second, there must be **high-level labour and management membership** to give the Board both the profile and independence to carry out its critical functions. These members must be representative of management and labour in the province, both large and small business, and private and public sector workplaces.

Third, there should be **senior-level federal and provincial government involvement** through the participation of relevant deputy ministers on an ex-officio basis. This expanded representation will help ensure that a broader range of interests and expertise is part of the ongoing deliberations and function of the OTAB.

Fourth, **representation of other important interests** will also be achieved by the appointment of four general representatives to

the Board. Those members would be selected on the recommendation and mutual approval of the management and labour members and would be given 'voting' status.

A strong commitment by the labour and management members to steady and long-term involvement is the fifth key factor in the OTAB's success. The prominent management and trade union representatives on the Board must lend more than their names to the OTAB. They must be willing to commit their time and energy to tackling the difficult issues at hand. Members should be appointed for a minimum two-year period and any rotation of the membership thereafter should be staggered.

Finally, it is imperative that **genuine authority for program and funding decisions** be vested in the OTAB. This is not to suggest that the OTAB be given carte blanche for the disbursement of public funds for training activity. Rather, the OTAB should have a broad mandate for workplace-related training and the discretion and ultimate authority to determine how and where training monies are best allocated to serve the public interest. This authority will nevertheless have to be exercised within a framework of government accountability, since it is government that will ultimately release funds on the OTAB's recommendation.

The Premier's Council cautions against this new training structure becoming an elaborate bureaucracy that is even more complicated than the one it is designed to replace. It recommends that the administration supporting OTAB and its affiliates be kept focused and responsive to the needs of the system's beneficiaries — that is, the province's workforce. At the same time, it must have sufficient staff and expertise to carry out effectively the responsibilities that it is assigned. While cooperative relationships can be developed with government to transfer the necessary functions and expertise in the short-term, the separate roles and functions of government and the OTAB will need to be clear, and the OTAB will have to assume many of those functions that were previously the responsibility of government ministries. Functions which will shift to the OTAB should include labour market assessment, administrative support for the provincial apprenticeship system and all current workplace oriented training programs, such as Ontario Skills, the Training Consulting Service (OSDO), Ontario Training Corporation, Technicians/Technologists Skills Updating and the Trades Updating Service. The OTAB will have to decide which of these programs are to be continued and in what form. While the OTAB represents a new structural approach to training in Ontario, it does not represent another new agency in an already confused and crowded field. Rather, the OTAB represents an opportunity to rationalize existing structures and programs and to achieve a clear focus, mission and approach to the training challenge that organizations in the province face.

An OTAB Secretariat should be established outside of government to serve OTAB and the various training committees. The Secretariat should act as a liaison between OTAB and public sector ministries in the new training structure. It should be comprised of a core staff hired on a permanent basis, with staffing augmented by rotating secondments of perhaps two years from industry, labour and other relevant groups.

RECOMMENDATION 20: Sectoral Training Committees

The Premier's Council recommends that sectoral training committees be established to create and administer a regime for training in their industry sectors. These sectoral Committees would be eligible for matching government funding with OTAB approval.

As part of its mandate, OTAB will establish goals within sectors and an overall goal for increased investment in training. If substantial progress towards realizing these goals is not achieved, the province should adopt additional fiscal measures.

THE SECTORAL TRAINING COMMITTEES

One of the OTAB's primary responsibilities will be to oversee the development and delivery of industry-specific training through a set of Sectoral Training Committees. These will be bipartite committees, composed of management and labour representatives that will create and administer a regime for training in their respective industry sectors. The committees could be organized on a single sector basis (plastics or auto parts, for example) or on a multi-sectoral basis, like metalworking industries, where training activity tends to cut across related sectors. Responsibility for delineating the jurisdiction of the respective sectors will rest with the OTAB in negotiation with sector representatives. The model will be voluntary, in the sense that there will be sectoral training committees formed only in those sectors where a substantial consensus to create the committee exists.

The Council sees the Sectoral Training Committees as an extension of the emerging cooperative sectoral approaches discussed above, particularly the Sectoral Training Fund in the electrical industry. The operation of the Sectoral Committees will help overcome a number of problems that have hampered the provincial training effort. The committees will increase the overall amount of funding available for training in their sectors, by helping to distribute across many firms the costs and responsibility for training. Firms wishing access to matching public money for training will be compelled to participate in the sectoral training schemes. Responsibility for determining the quantity and nature of the training offered will rest squarely with the principal labour market parties – labour and management. This direct control over the sectoral training effort will ensure that the training offered meets the specific needs of firms and provides workers with the flexibility and mobility they desire.

The committees would organize themselves to gain recognition as Sectoral Training Committees by OTAB. Funding for the Sectoral Committees would be voluntary, as is the case with the electrical industry's Sectoral Training Fund, and negotiated by employers and employees in each sector. To the extent that public monies are channelled into these Committees, government would have to participate in these negotiations. Where employees are unionized, they would be represented in these negotiations by their union. With the agreement of trade unions, a designated employee amount could be negotiated in the manner of paid educational leave. It would be essential, however, that such a designation of the employee contribution as a negotiated benefit not result in any tax liability accruing to individual workers.

Once a sector was defined, it would be subject to regulatory provisions that would allow public funding to be made available on a matching basis for training in that sector. Access to public

funding for training would serve as an incentive to management and labour to form Sectoral Committees. Through this approach, the OTAB would serve as both the agency for initiating sectoral training and for ensuring continuing cooperation with the federal government in the sectors that have cooperative initiatives already underway.

Under this scenario, two classes of sectors will likely emerge: one in which there is global consensus for the sectoral training approach and one in which there is significant, but not unanimous, support. In the first case, the terms of the contributions would be determined on a sector by sector basis (excepting small businesses, perhaps) and "minuted". In the second case, companies could opt out of the sectoral training fund; such companies would be eligible for matching government funding of their training programs only with the approval of the OTAB, which approval would have to be renewed at appropriate intervals. The OTAB would thus play an arbitration role in these instances, and its decisions would have to be regarded as binding. The OTAB would also play a coordinating role for the Sectoral Training Committees, while respecting their differing priorities and need to be responsive to their sectors.

As is the case in the electrical industry model, the Sectoral Committees will be complemented by Joint Workplace Training Committees, formed by management and workers at each participating workplace. The Workplace Committees will assume responsibility for the operation of all aspects of the Sectoral Funds at the workplace level. Their mandate could include making recommendations to the Sectoral Training Committee about the training to be financed by the fund at that workplace. Time off work to participate in both the sectoral and workplace committees should be fully compensated, either directly through payments to the employees or indirectly through reimbursements to their employers. The Council recognizes that this feature is essential to ensure the fullest participation of a broad range of individuals at both levels.

There is complete agreement among Council members on the necessity and urgency of increasing both the amount and the effectiveness of training in the province. While there is the goodwill and genuine commitment from all parties to launch an effort to improve our training record, we must nevertheless set our sights high and measure our progress if we expect to achieve more than incremental increases.

In order to achieve a quantum leap in training, the OTAB must take on as one of its first tasks the development and articulation of an overall goal for increased training investment. The Premier's Council recognizes that the optimum level of investment in training will vary by sector and over time. The Council notes that, in the case of the electrical industry sectoral fund, participants adopted a spending goal for training of one percent of payroll. In some sectors, that level may be too low; in others, it may be unattainably high at this time. Given the urgent need to achieve a substantial increase in training investment, the Council urges the OTAB to determine with each industry sector whether and what goal would be appropriate.

These sectoral consultations will enable the OTAB to set an overall goal for increased training in the province and a reasonable timeframe for its achievement. This overall provincial goal should also contribute to the attainment of a national objective. Progress towards this goal should be reviewed annually and reported publicly.

The strategy set out in this report relies on voluntary co-operation among employers, employees and both levels of government to accomplish the vital national task of eliminating the training deficit. If, however, substantial progress towards realizing that goal is not achieved, then additional fiscal measures, such as assessments, perhaps in combination with incentives, will be needed to bring training investment to the level required.

RECOMMENDATION 21: Regional Training Committees

Regional Training Committees should be established to respond to the diverse needs of local communities and businesses in the area of training. Ontario should negotiate with the federal government the integration of the CITCs and the Regional Training Councils to avoid the creation of parallel structures.

THE REGIONAL TRAINING COMMITTEES

Not all sectors of the provincial economy nor all members of the labour force will be covered by the operation of the Sectoral Committees. Many small businesses and some of the more geographically isolated large ones will find a regional approach to training more useful. Consequently, there will be a need to establish complementary Regional Committees, which as their name suggests, will provide a local mechanism for the delivery of training. They will be multipartite committees composed of business, labour, and community representatives. The area of jurisdiction for each committee could correspond to the existing catchment area of the community colleges (allowing for amalgamation of college areas in Toronto and the Niagara region). This should help foster a close working relationship and ongoing assessment of training needs between the colleges and the Regional Committees.

The Regional Training Committees must be truly representative of a diverse range of interests in their local communities to serve their roles well. Membership in the Regional Committees will be based upon institutional nomination — one-third from employers, one-third from trade unions and one-third drawn from community-based organizations. This will ensure that the Regional Committees remain accountable to the constituencies they represent. Time off for participation in these committees should be fully compensated, as is the case with the Sectoral and Workplace Committees.

The Regional Training Committees will also be funded in a different manner than the Sectoral Committees. The OTAB will allocate a pool of funds to each Regional Training Committee to cover the cost of training services and research relevant to the needs of its area and the businesses therein. Committee members will determine more precisely how its funding pool is to be divided to serve the needs of the local community. Responsiveness to local, small business and other training needs not covered by the sectoral approach will be paramount for the Regional Training Committees. The OTAB will be responsible for ensuring that the training programs provided through the Sectoral and Regional Committees are complementary.

The role of the Regional Committees complements that of the Sectoral Committees by guaranteeing that the training coverage provided through the OTAB is comprehensive. Their operation will counteract some of the problems that have characterized the

current training system. Regional committees composed of a membership that is truly representative of their respective constituencies will ensure that funding for training is allocated to its most effective uses. These committees will also provide an invaluable resource to firms, workers and community organizations in maintaining the highest quality standards in training. The role of the Regional Committees will vary with the specific challenges each local area faces. For example, in some regions the Committee could be a critical mechanism for monitoring and enhancing the labour adjustment and training process.

RECOMMENDATION 22: **An Ontario Apprenticeship Board**

The Council recommends the creation of an Ontario Apprenticeship Board to revamp the industrial apprenticeship system in the province.

APPRENTICESHIP REFORM

The Council recognizes that reform of the existing apprenticeship system is critical to the creation of a more effective training system in the province. Accordingly, it recommends the creation of an Ontario Apprenticeship Board with responsibility to revamp the industrial apprenticeship system in the province. This will be a bipartite body reporting directly to the OTAB and charged with creating a rigorous and responsive new process for standard setting and administrative overhaul of the industrial apprenticeship system. The primary responsibility of the Apprenticeship Board will be to regulate access to and certification of a wide range of occupations within the province. The Apprenticeship Board would concentrate on reform in the industrial trades.

The Apprenticeship Board could commence its new responsibilities by investigating and bringing forward recommendations to the OTAB for reform in the industrial trades. For instance, the OTAB could direct the Apprenticeship Board to develop a renewal plan for tool and die apprenticeships and other areas where critical shortages of industrial trades have been identified. As the education and training requirements for a wide range of technical occupations and the existing apprenticeships are rapidly converging, the Apprenticeship Board could rationalize these requirements by extending the jurisdiction of apprenticeships to cover a wider range of technical trades skills deemed essential for a dynamic manufacturing sector.

In addition, the Apprenticeship Board could help develop new funding mechanisms to expand the opportunities available to young people. It could use OTAB funding as a mechanism to negotiate training spots for apprentices within industry sectors and it could also seek commitments from the Sectoral Committees to support a guaranteed number of apprenticeships. Broader issues, such as incentives for young people to enter apprenticeable trades or expanding the opportunities for older workers to enter apprenticeship could be tackled by the Apprenticeship Board as well. As with other elements of the OTAB initiative, the key to the Apprenticeship Board's success where other efforts have failed must lie in the shared commitment and responsibility of management and labour to make it work.

RECOMMENDATION 23: The Learning Network

Council recommends the development of a learning network to support and enhance best practice in education and training in the province.

THE LEARNING NETWORK

The Learning Network is proposed as a process for interaction, not another bricks and mortar institution. Funded in part through corporate membership or user fees, the Network's primary objective would be to raise awareness of the learning process and how it can be enhanced. It would identify and evaluate the best learning tools available worldwide, as well as undertake research into areas of learning and creativity. Through professional development programs, seminars and other communication vehicles, it would also disseminate the concepts and findings that constitute best practice in education and training.

The OTAB would provide general guidance to the Learning Network in carrying out these multiple functions. More important, however, the OTAB would coordinate the interaction between the Network and the Sectoral and Regional Training Committees. By maintaining current information on the available tools for effective learning and training and acting as a resource centre for industry, labour and institutions in identifying appropriate sources of training, the Learning Network could assist the Committees in the transfer of good training technology.

The Learning Network will also have a critical role to play in educating and keeping current the management and labour representatives on the various Sectoral and Regional Training Committees. These representatives will need a high degree of understanding of training issues and approaches to be effective. The Learning Network will provide seminars and briefings for committee members on what constitutes the most effective workplace training.

The Council sees this is an interactive network creating relationships among the leading training organizations in the province and training research organizations outside the country. The foremost model for such a network in Canada lies not in the human resources field, but rather in the research and development area. The research networks set up by the Canadian Institute for Advanced Research connect leading Canadian R&D performers in selected fields like superconductors with leading researchers abroad. The Learning Network should be a similar facility for linking Ontario's leading workplace trainers with one another and with leading groups internationally.

THE DELIVERY MECHANISMS

The creation of the OTAB with its corresponding Sectoral and Regional Committees is designed to make the delivery of training in the province more responsive to the needs of its users, but not to reduce the options for training that are currently available. Our review of the current policy and delivery mechanisms indicates that the proliferation of programs and overlapping jurisdictional responsibilities generates confusion, not effective choice. The OTAB is designed to simplify the lines of responsibility for training and streamline the process, while increasing the store of training options available for recipients.

The delivery of training in the province must correspond to the needs of all constituencies in search of training opportunities.

The variety of needs to be met extends from those who constitute the currently employed workforce, to those employed workers who are at risk or have recently been displaced, and finally, those workers with only a marginal attachment to the labour force. Each of these groups comes to the issue of training with a different educational background, a different set of skills, and consequently, different training needs. Their training needs cut across the full spectrum of skills – from adult basic education to generic technical and organizational skills to job specific technical and related skills.

Under the changes proposed in this report, responsibility for firm-specific training will reside in the workplace and will be carried out on a cooperative basis. The structures associated with the OTAB will assume responsibility for facilitating the delivery of non-firm-specific training to the currently employed workforce and those facing adjustment (as will be explained in Section III). The types of training that would qualify for funding under the OTAB would extend from adult basic education to training in generic technical and organizational skills.

Adult basic education includes training in the core skills of literacy and numeracy that constitute the fundamental building blocks for the future acquisition of skills. At present, it is delivered through a variety of institutional mechanisms, from community organizations to local school boards, community colleges and through such innovative programs as Basic Skills in the Workplace. The changes envisaged would retain the existing diversity of delivery mechanisms. Responsibility would rest with the Sectoral and Regional Committees for decisions about the most effective means for providing adult basic education to those trainees under their jurisdiction.

The skills most in need of greater investment and attention at present are generic workplace skills. Increased training in generic workplace skills should fall under the mandate of the Sectoral and Regional Committees. Each Committee would have the flexibility to fund different types of training programs to meet the needs of firms and employees in different settings. The institutional settings in which the training would be delivered would vary; it could be purchased from existing public institutions, such as the community colleges, or it could be provided through union-sponsored training programs or private trainers. Vision 2000, the policy review of the Colleges of Applied Arts and Technology, also stressed the need to incorporate training in generic or fundamental skills into the core college curriculum.

This focus and the buying power of the Sectoral Committees should lead to a high degree of control over the quality of training provided. In keeping with the Council's recommendation in the Education Section of this report that community colleges should specialize more in their technology programs, the Sectoral Committees may logically provide a buying focus for that specialization. For instance, a plastics industry Sectoral Training Committee would be a logical focal point for developing leading plastics technical expertise in the college system.

The Sectoral and Regional Committees will have great latitude in determining the mix of and types of training each can provide. Part of the responsibility of the committees operating under the OTAB will be to determine the nature of the technical skills training needed in their jurisdiction and to match that need effectively with the range of available suppliers, including the

colleges. This should make the training provided more responsive to the demands of the potential users.

The Premier's Council, in recommending the Ontario Training and Adjustment Board, recognizes that only the fullest commitment and attention of senior leaders in government, management and labour will result in its successful implementation. The Council also recognizes that many of the steps that will be taken will represent new approaches in the current industrial structure of Ontario. As a result, the Council believes that after a period of three years from the inception of the OTAB, a thorough review be undertaken and its future course be reassessed at that time.

The primary focus of training sponsored by the OTAB will be the currently employed workforce. But the Council recognizes that an equally aggressive commitment must be made to training for those not already employed. The Council views an ongoing commitment to training throughout all sectors of the provincial economy as essential for an effective labour force adjustment strategy. However, it recognizes that at-risk and displaced workers have special needs.

Community-based training constitutes a sorely neglected but vital component of our existing training delivery system. Despite their success in working with high-risk and disadvantaged workers, many of these community projects have been severely threatened by the continuing changes in funding structures and program criteria in recent years.

A major impediment for these groups is the lack of integration among municipal, provincial and federal agencies and programs. The main problem is lack of information; there is no single, easily accessible source of information for either counsellors or service recipients on the availability of training programs or individual projects. Referral to a specific service usually depends on the knowledge and experience of whichever counsellor the recipient happens to consult. As long as the training system continues to rely on this haphazard approach, the most successfully designed programs will be underutilized and linkages between programs will be ineffective.

RECOMMENDATION 24: Local Training Access Centres

Local training access centres should be established to provide information and support services to the employment disadvantaged who require access to training opportunities.

The Premier's Council recognizes that access to information and effective counselling constitutes one of the crucial requirements to assist the groups with special needs to improve their training opportunities. Accordingly, the Council recommends the establishment of Local Training Access Centres to assist the employment disadvantaged in gaining access to information about the availability of training opportunities and support services. The Regional Training Committees of the OTAB would be assigned responsibility for organizing and coordinating the activities of these centres. However, the funding and sponsorship of employment access training would remain with provincial line ministries and not the OTAB.

The Training Access Centres should be community-based, with flexible hours and easy retrieval of information about training opportunities. They should be affiliated with local community colleges or other relevant public educational institutions. Their role is to provide those interested with one-stop-shopping for employment and training-related information.

The division of training responsibilities for workplace training under the auspices of the OTAB and employment access training under direct ministerial responsibility will require careful management. It is important that training for the employment disadvantaged be closely linked to the skills demanded in the job market. Thus, it will be desirable to have the OTAB provide clear and timely information on labour markets to the government areas responsible for such training. The Regional Training Committees of the OTAB should set up and manage the Local Training Access Centre to provide a client link between the employment disadvantaged and the training system under the OTAB's direction.

*Good adjustment is more than just finding another job.
It's getting your life back together.* LAID-OFF STELCO WORKER

LABOUR FORCE
DISPLACEMENT
AND
ADJUSTMENT

ADJUSTING TO CHANGE: A FOCUS ON THE WORKER

151

Over the past decade, Ontario has experienced major industrial restructuring. Even more dramatic will be the changes to come as a result of intensified global competition, the uptake of new technologies, and the Canada-United States Free Trade Agreement. In a dynamic economy, industrial restructuring is a constant process in which firms open, close, divest and reorganize in order to change production levels and remain competitive.

This restructuring often has a major impact on workers, who are consequently redeployed or made redundant. While job growth has been strong in Ontario, many of the new jobs available to displaced workers are in the rapidly expanding service sector or those segments of manufacturing where the quality, wages and skill levels are lower than those of the jobs they have lost. The reintegration of workers laid off from manufacturing industries, especially older workers, has generally not been successful. Many have experienced long bouts of unemployment and often those who have found jobs take substantial pay cuts, lower skill work, or both. Economic adjustment takes a heavy toll on the labour force.

The demands of global competition and new technologies are forcing firms to innovate. Firms need to change their work structures and deploy new production technologies, sometimes very rapidly. One method pursued by a small minority of Ontario employers is to broaden jobs, equip workers with skills to perform many tasks, and seek to assure a more committed workforce by offering some measure of employment security. This "functional flexibility", which tends to be associated with the "salaried model" of employment found in most white collar and professional occupations, offers many advantages to employers in the context of a growing need for a stable high-skilled labour force. The other much more prevalent strategy in Ontario is to respond to change through workforce reductions, layoffs and plant mobility. This "numerical flexibility", which is associated with the "industrial

model" or most blue collar occupations allows firms to reduce workforces rapidly when needed. It often carries the disadvantage of more rigid wage structures and deployment of labour.

Employment relationships with a strong commitment to labour and management cooperation are an essential ingredient of a successful labour adjustment policy. The initial focus for labour adjustment should be at the level of the firm. The preferred form of adjustment is internal to a firm, whereby an employer and employee weather change together. Sometimes this requires outside support, as in the case of training. But internal adjustment is not always possible, since change often means that firms and workers sever their relationships. When this occurs, employers have a responsibility to assist workers in a successful external adjustment.

Successful adjustment does not mean simply finding a new job. A more holistic definition of adjustment would mean that workers do not experience undue stress or health problems as a result of the change, that new jobs use as much or more of their skill levels as the previous one, that workers at least maintain their standard of living and that the adjusted workers consider the new situation satisfying.¹ Unfortunately, successful adjustment in Ontario is not as extensive as it should or could be. The workers directly involved are the most seriously affected, but the sad reality is that we all lose because our communities suffer and our most precious asset, our human resources, are squandered.

Governments also play a key role in the adjustment process. Public labour market policy and the regulatory environment help determine whether adjustment is successful or not. In this sense, labour market policies are important instruments of economic and social management. They can facilitate adjustment by providing for training, information and other services. They also help to ensure that the costs of change are shared. The relationship among business, labour and governments in the adjustment process should be a mutually supportive one. Governments provide the platform for effective labour adjustment and play a supportive and facilitating role, but business and labour should take the initiative in building on this platform an adjustment infrastructure and culture which minimizes the pain of dislocation and speeds productive redeployment. Finally, the community also has an important role in providing services and in offering alternatives to layoffs.

We are at an important juncture in our economic life. The global competition that we face offers enormous challenges and opportunities as well as risks. Change is inevitable and the pace of restructuring in Ontario is accelerating. The Ontario economy is particularly vulnerable to change because of its mature manufacturing base and its traditional branch plant economy. We face two main tasks in this turbulent environment: to assure that change will not affect any one group adversely and to assure that we capture the benefits that productivity improvements and restructuring can bring. Neither of these outcomes can be guaranteed. Moreover, the existing climate for adjustment within firms and the supports for adjustment by governments are ill-suited to achieve these outcomes. The challenge is for us to manage labour market adjustment effectively, rather than to let it manage us.

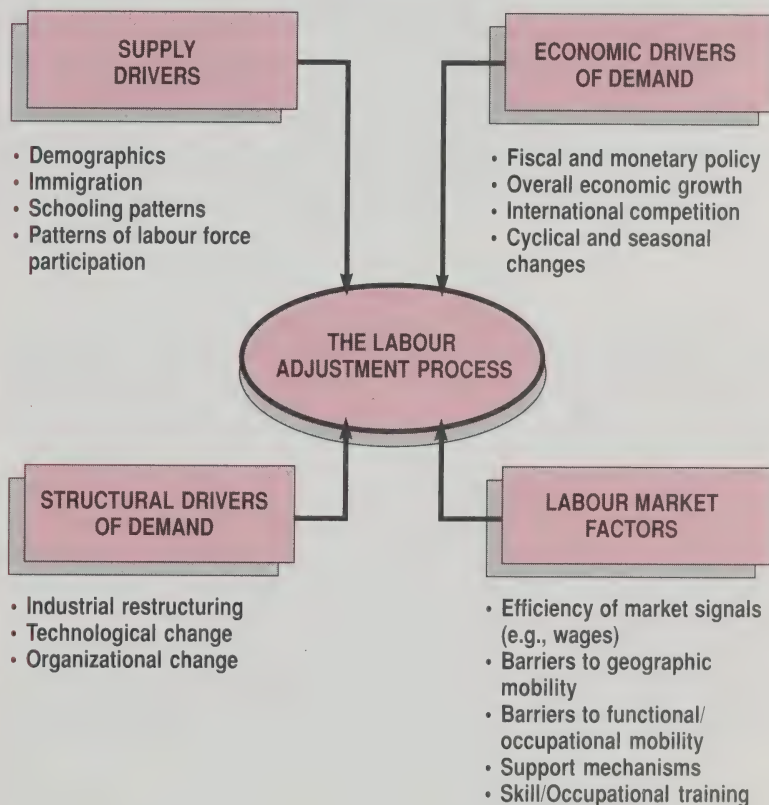
¹ J. Paul Grayson, "Adjustment to De-industrialization in Metro Toronto", in *Manufacturing Matters*, Toronto, Industrial Development Institute, 1989.

There are many forces at work in the process of economic adjustment. The economic drivers of demand, which determine the overall state of the economy, include fiscal policy and monetary commitments, as well as international competitiveness and trading policies. The structural drivers of demand include technological change, industrial restructuring and organizational change.

It is often difficult to isolate the economic and structural factors driving demand or determine their relative importance since they interrelate and often operate simultaneously. This is why adjustment assistance in response to specific circumstances, such as the Canada-United States Free Trade Agreement, is very difficult to apply.

EXHIBIT III.1

Factors Driving Labour Adjustment



Those factors which influence labour supply include changing demographics, immigration, schooling patterns and rates of labour force participation. Other labour market factors which influence adjustment include wage levels, barriers to mobility (age or family circumstances, for instance), skill levels and social support mechanisms, such as day care and income security.

Economic restructuring and the labour market adjustments that flow from it are not necessarily signs of overall economic problems. Some of these changes are a necessary part of achieving the productivity gains that play an essential role in improving standards of living. Such transitions are healthy signs of the major technological, structural and organizational changes taking place as we build higher value-added industries and ensure that a highly skilled labour force is available to facilitate these transitions to new opportunities.

JOB CHURNING

It must be recognized, however, that while labour mobility and effective adjustment are critical in a world of rapid technological change and globalized markets, not all adjustment is necessary nor good. Indeed, some restructuring is the result of ad hoc and ineffective actions on the part of firms, while other restructuring can be associated with near-sighted industrial and economic policies fashioned by governments. When labour mobility is involuntary, it is neither easy nor natural for those who experience it. While involuntary job changes may result in new positions that are comparable or even better than the jobs lost, there are all too many that lead to an inferior job, to a withdrawal from the labour market, or to unemployment. In these cases, the term "adjustment" becomes a euphemism for job loss.

The downside of adjustment raises several broader issues. One is whether the burden of adjustment is being equitably distributed across society. There is also the issue of whether dislocation or failed adjustment becomes self-perpetuating and an impediment to the adjustment process occurring successfully. In dealing with the latter issue, it is important that firms through their internal practices and governments through their labour market policies attempt to minimize the number of job losers in the first place. Where job loss is unavoidable, the affected workers must be treated with dignity and in a way that will prevent the dislocation effects from being perpetuated.

On the demand or jobs side, changes in employment are the result of the creation, expansion, contraction or closure of firms. This process involves considerable turnover in jobs and workers, a process often referred to as "churning". The most comprehensive research on job turnover in Canada is by Baldwin and Gorecki for Statistics Canada and the Economic Council of Canada.² They have looked at several measures of turnover based on manufacturing employment and establishment data from 1970 to 1981.

One measure of volatility in the labour market is calculated on the basis of the gross number of jobs lost plus the gross number of jobs gained. By this measure, total job turnover amounted to 18 percent annually of total employment in Canada's manufacturing sector between 1970 and 1981, while the annual net employment change was less than one percent. Over this ten-year period, gross job gain was about 40 percent of the base year employment. Gross job loss was about 31 percent, some 19 percent resulting from plant closures and 12 percent from plant contractions.

There is even more turnover in firms. Forty-three percent of firms operating in the manufacturing sector in Canada at the beginning of the decade had closed down by 1980, and a third of all firms in 1980 had started operating since 1970. The majority of new entrant firms were new plants (over 27 percent), while a minority (almost 6 percent) represented new entrants via merger.

These 1970-80 data reveal some important new insights about the restructuring process in Canada. Despite the conventional notion that net change within and between sectors is not that significant, the above figures show that employment reallocation at the level of the firm is large, however measured, and far more substantial than traditional measures of inter-industry movements would imply. Secondly, this research indicates that intra-industry

² John R. Baldwin and Paul K. Gorecki, *Dimensions of Labour Market Change in Canada: Intersectoral Shifts, Job and Worker Turnover*, Ottawa, Statistics Canada, 1989 and *Structural Change and the Adjustment Process: Perspective of Firm Growth and Worker Turnover*, Ottawa: Economic Council, 1990.

competition is a more important factor in understanding worker dislocation than is structural change or the decline of entire industrial sectors. This suggests an important role for firm and sectoral-based economic and adjustment policies. Finally, over the short-run, new firm entry and old firm exit are relatively minor sources of worker dislocation. But over the longer term (say, ten years), employment losses due to closures is greater (at 19 percent) than the employment losses (at 12 percent) due to contractions in continuing firms. This too argues for making closures a major focus of labour adjustment policies.

A more recent estimate of firm births and deaths in all sectors in Ontario suggests that in the 1980s the turnover was even greater than that described above for Canada's manufacturing sector in the 1970s. Approximately 179,000 firms representing about 62 percent of businesses in existence in 1986 had been established since 1978. Small businesses with less than 20 employees were responsible for over 90 percent of this growth. Over the same period, 184,000 firms representing 48 percent of all businesses operating in 1978 were gone by 1986; the vast majority of these were also small firms. The turnover rate (i.e., total births and deaths as a percentage of firms in 1978) for all firms in Ontario for the period was a remarkable 132 percent. Even for large firms with 500 or more employees it was an astonishingly high 34 percent.

EXHIBIT III.2 Turnover Rates in Ontario Firms, 1978-86

FIRM SIZE (NUMBER OF EMPLOYEES)	BIRTH RATE (%)	DEATH RATE (%)	TURNOVER RATE (%)
Less than 5	97.4	-53.7	151.1
5 to 19	52.8	-36.1	88.9
20 to 49	38.8	-33.6	72.4
50 to 99	34.5	-32.3	66.8
100 to 499	24.5	-30.7	55.2
500+	12.2	-21.7	33.9
All sizes	83.1	-48.4	131.5

Birth Rate = New Firms as a percentage of number of firms in 1978
Death Rate = Firms that "died" by 1986 as a percentage of number of firms in 1978
Turnover Rate = Sum of births and deaths as a percentage of number of firms in 1978

Source: Department of Industry, Science and Technology Canada

**LAYOFFS
AND CLOSURES
IN ONTARIO**

As we have seen, one of the most important aspects of adjustment, particularly over the long run, is the displacement that occurs as a result of plant closures. Plant closure data for Ontario indicate that layoffs of 50 or more employees due to closures fell sharply immediately following the 1982 recession but began to increase again in 1986, despite a decline in the unemployment rate and strong economic growth. Over 12,000 workers lost their jobs as a result of a partial or complete closure in 1989. This is a larger number than in 1982 at the height of a major recession.

The vast majority of layoffs in Ontario occurred in manufacturing industries, and the most frequently cited set of reasons for complete firm closures were “consolidation, rationalization or relocation”. (See Exhibit 3.4) This suggests that significant restructuring in industry occurs even in periods of relative economic prosperity, and that such restructuring may be on the increase due to global competitive pressures, the Canada-U.S. Free Trade Agreement and, more recently, federal monetary policies. The possibility that these structural changes in the economy could be intensified by a cyclical slowdown in the near

EXHIBIT III.3 Partial and Complete Firm Closures in Ontario, 1981-89.

YEAR	PARTIAL CLOSURES	EMPLOYEES AFFECTED	FULL CLOSURES	EMPLOYEES AFFECTED	TOTAL CLOSURES	TOTAL EMPLOYEES
1989	22	2,979	77	9,705	99	12,684
1988	12	1,129	58	8,127	70	9,256
1987	10	980	60	9,124	70	10,104
1986	14	1,116	41	7,007	55	8,123
1985	18	2,081	54	5,630	72	7,711
1984	16	2,341	47	5,526	63	7,867
1983	9	1,076	53	5,558	62	6,634
1982	13	1,232	73	9,918	86	11,150
1981	13	1,400	49	5,497	62	6,897

Note: This data covers only *reported* closures – that is, those firms required under legislation to give notice.
Source: Employment Adjustment Branch, Ontario Ministry of Labour.

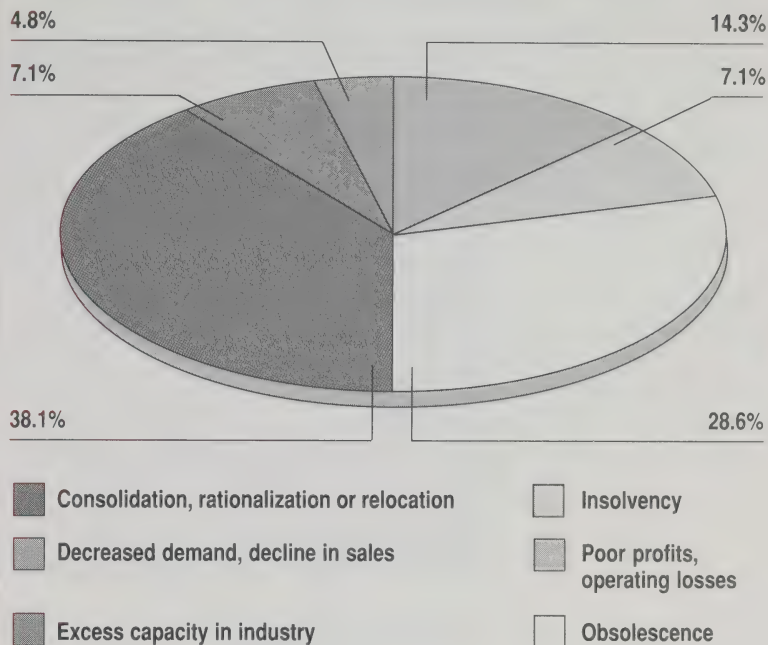
future is further cause for concern. Employment growth has slowed considerably since 1988 and layoff activity is increasing.

**ADJUSTMENT AND
TECHNOLOGICAL
CHANGE**

The above figures on firm and job turnover, firm closures and layoffs do not adequately measure the extent to which change has occurred inside firms. A major spur to the internal adjustment process is technological change. The introduction of new technology invites two kinds of adjustment: one results in new skills being required of the existing workforce, while the other simply makes workers redundant. Redundancies may occur when new technologies reduce the number of workers required for a given level of production, or because the technologies alter job types and render certain skills obsolete.

Internal restructuring resulting from technological change is more likely to occur when the economy is performing well and firms are willing to invest in new equipment. But it is difficult to gauge the extent to which adjustment can be directly attributed to technological change. In a survey for the Economic Council of Canada, two-thirds of employers reported that some adjustment was required to respond to technical innovation. The adjustment method most frequently cited was an internal transfer, an ideal solution, but one that is available almost exclusively in larger operations. Layoffs were reported in over ten percent of cases, and the highest incidence of layoffs due to technological change was found among medium-sized (101-500 workers) firms.

Reported Causes of Complete Plant Closures in 1989



Source: Compiled by the Ontario Federation of Labour, based on Ontario Ministry of Labour Data.

JOB LOSS AND LABOUR MOBILITY

Job churning obviously has a dramatic and not always favourable impact on the people who lose their jobs. If job turnover is high in a dynamic economy, labour mobility is even higher. People move in and out of jobs in the same firm, in and out of firms, industries and occupations, and in and out of employment. Every month approximately 10 percent of the Ontario labour force changes its employment situation. The majority move immediately from one job to another. About 3.1 percent of those who are employed either leave the labour force or become unemployed, while a larger proportion enter the labour force or become employed.

Most labour mobility occurs in small numbers.

These minor adjustment shocks are part of the constant process of economic restructuring. We sometimes take this ongoing adjustment process for granted, focusing instead on the relatively less frequent, but far more visible large-scale layoffs. But small-scale adjustments are, cumulatively and in themselves, as significant as the larger adjustment shocks.

Labour mobility that is self-determined is generally good for the people who experience it as it means that they are finding better jobs, seeking training or further education or otherwise pursuing their personal goals. But even when changes are voluntary, adjustments are not necessarily ideal. And when labour mobility is involuntary, it can be destructive both for the individuals involved and for society. The traditional assumption underlying labour adjustment policy is that most job changes are voluntary and when they are not, at least the resulting unemployment is temporary. Until recently our ability to understand this problem was hampered by the lack of adequate data and basic research on worker separations. Fortunately, new research using

EXHIBIT III.5

Personnel Adjustments Due to Technological Change
Canada, 1980-85

METHODS OF ADJUSTMENT	PROPORTION OF INNOVATORS USING EACH METHOD*
Transfers	44.0%
Internal	43.1
External	4.6
Layoffs	10.4
Temporary	2.4
Permanent	9.4
Early Retirement	6.4
Reduced Hours/Part-time Work	9.9
Some type of redundancy adjustment	66.5

* Multiple Responses were possible

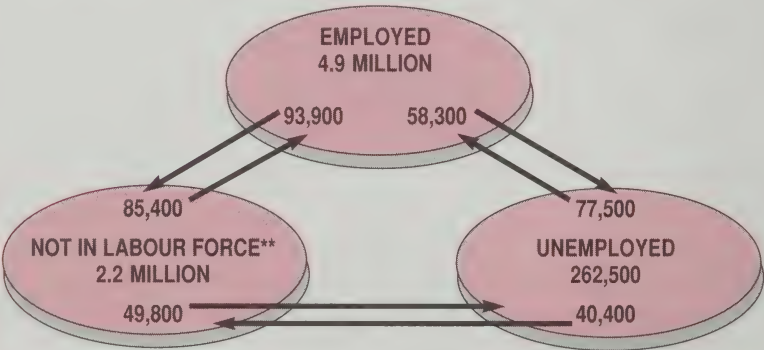
Source: Economic Council of Canada

administrative data from unemployment insurance and other special surveys have helped shed light on what happens to Canadian workers who separate from their jobs.³

The total separation rate (the number of separations divided by the number of individuals holding jobs) between 1976 and 1986 was 46 percent. Slightly over half of all job separations that occur in Canada are voluntary in the sense that workers quit their jobs, go back to school or leave because of pregnancy or illness. Forty-four percent of all worker separations in Canada between 1974 and 1986 were the result of layoffs or involuntary separations. Layoffs were

EXHIBIT III.6

Average Monthly Labour Market Flows in Ontario, 1989*



* Based on data from January to October, 1989.

** Neither employed nor unemployed.

Source: Special tabulation on Statistics Canada data prepared by Employment and Immigration Canada, Regional Economist's Office, 1989.

³ Baldwin and Gorecki, *Dimensions of Labour Market Change In Canada: Intersectoral Shifts, Job and Worker Turnover*, Ottawa, Statistics Canada, op. cit. p.29.

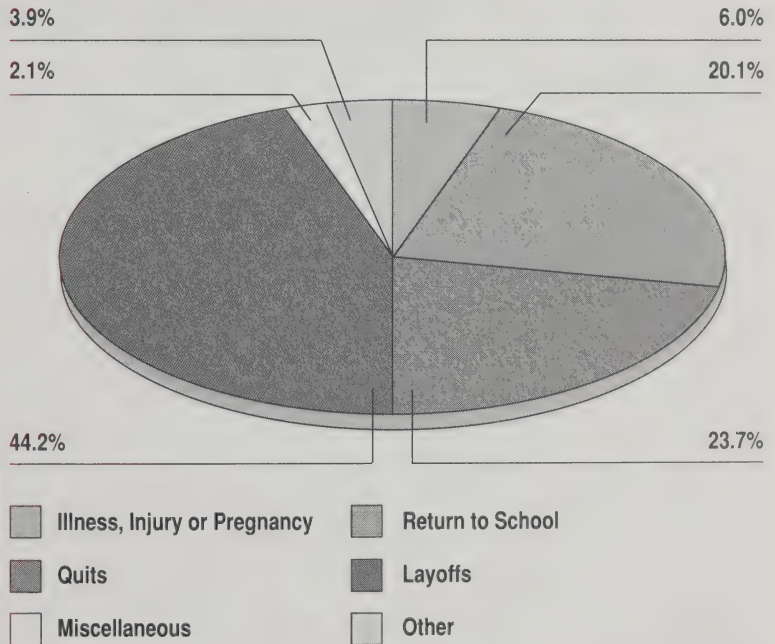
twice as important as quits, but since a large proportion of layoffs was temporary (in the sense that the worker returned to the employer within two years) permanent quits and layoffs accounted for about the same percentage of worker separations.⁴

The rate at which workers in the manufacturing sector are permanently separated from their jobs (for any reason) is about three times the rate at which employment actually declines. From May 1989 to May 1990, almost 8 percent of Canadian manufacturing jobs were lost. In Ontario alone, 61,000 jobs or 6 percent of manufacturing employment disappeared, according to Statistics Canada data.

Between 1978 and 1984, the average annual permanent layoff rate of 7.5% and the average annual gross job loss rate of 9% were remarkably close. Exhibit III.8 also shows that involuntary permanent worker separation has exceeded voluntary job leavings since 1982. The Statistics Canada study from which these findings emerges concludes that "while yearly fluctuations in employment may be essentially transitory for the firm, this is not so for

EXHIBIT III.7

The Distribution of Worker Separations Annual Average for All Sectors, 1974-86



Note: Miscellaneous includes labour dispute, early retirement and work-sharing.
Source: Statistics Canada.

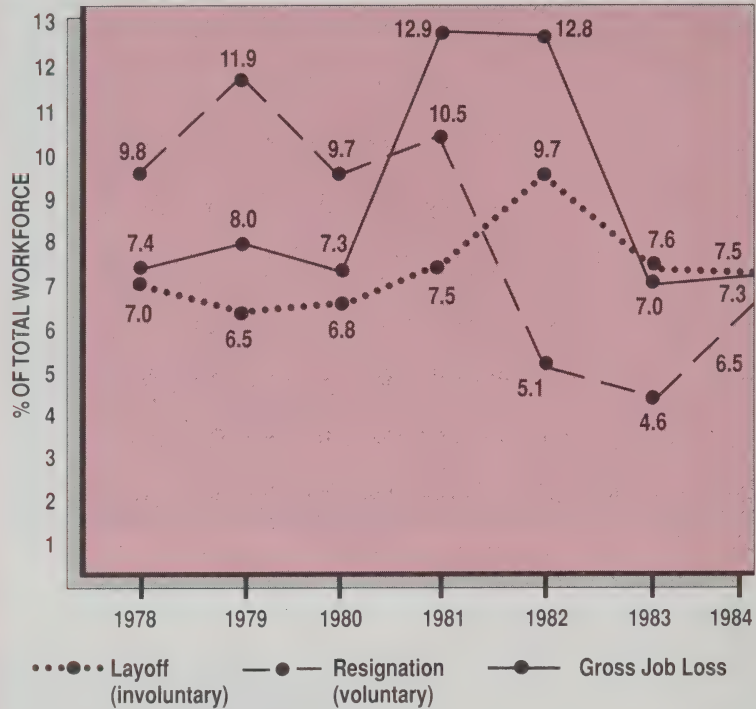
workers". This lends further support to the argument for a more active labour market policy to assist workers and firms in the process of adjustment.

INTERNAL AND EXTERNAL MOBILITY

There are essentially two types of labour market mobility: internal labour market movement, which refers to job or location changes within a firm, and external labour market movements, which occur when individuals move from one employer to another, become

⁴ Ibid, p. 24.

Voluntary Versus Involuntary job Leavings (Permanent) in the Manufacturing Sector, 1978-84



Source: Baldwin and Gorecki, *Dimensions of Labour Market Change In Canada: Intersectoral Shifts, Job and Worker Turnover*, Ottawa, Statistics Canada, 1989.

unemployed or move out of the labour force altogether. Internal movement is more common in large firms simply because their size and organizational complexity offer more opportunities for mobility. Furthermore, human resource policies at the firm level and collective agreements between employees and employers address such issues as hiring and layoff, promotional procedures and in-firm training programs. These policies govern whether internal mobility occurs and how.

Smaller firms are less able and therefore less likely to provide many opportunities for internal adjustment. They generally have less structured human resource policies, if they have them at all. Thus, when small firms restructure, much of the resulting labour adjustment will involve employees moving outside the firm. This being the case, the publicly sponsored adjustment policies that in theory apply to large and small firms alike take on particular significance for small firms with limited options for internal adjustment.

As part of its research, the Premier's Council studied nine Ontario companies that had closed plants or rationalized their workforces through major layoffs between May 1982 and January 1989. These closures or downsizings covered several industries and geographic locations and affected varying numbers of workers. The reasons cited for closure were also diverse, ranging from technological change to offshore competition. Attempts to determine what percentage of employees in each case were adjusted should be viewed with some caution, however, since definitions of adjustment varied considerably from company to company. No attempt was made to estimate the proportion of

LAYOFFS AND UNEMPLOYMENT

workers who were successfully adjusted according to a more holistic definition of adjustment since adequate data were unavailable. Instead, the Council's research looked at the percentage of laid-off employees who were redeployed, including those who returned to work, but also those who retired, relocated, entered a training program, returned to school or took maternity leave. In most of the case studies, a significant proportion of the workers who lost their jobs had still not found redeployment one year later. In a few cases, almost half of the workforce were not redeployed.

In a thriving economy with growing employment levels, new job creation will obviously exceed job loss. In 1988 – a very good year for the Ontario economy – overall employment increased by just over 100,000 during the year. At the same time, however, a monthly average of 256,000 people were unemployed during the year. Half of these people had lost their jobs as a result of layoff or some other involuntary cause. With an average duration of unemployment of 20 weeks, an estimated 320,000 Ontarians involuntarily lost their jobs and experienced a period of unemployment in 1988. This suggests that the economy has to run very quickly to move ahead even slowly and that the adjustment problem, even in a healthy economy, is substantial.

Statistics Canada's special Labour Market Activity Survey provides some information about what happens to people who lose their jobs. The study, conducted in 1986, looked at workers

EXHIBIT III.9

Nine Cases of External Labour Market Adjustment in Ontario

COMPANY	LOCATION	INDUSTRY	DATE	WORKERS AFFECTED	REASONS FOR CLOSURE	PERCENT ¹ REDEPLOYED WITHIN ONE YEAR
Canron	St. Thomas	Iron foundry	09/88	90	Rationalization	74%
Electrolux	Brockville	Electrical products	10/87	300	Loss of major contracts	49%
Firestone	Hamilton	Tires and tubes	01/88	1,286	Rationalization	95%
Fleck	Exeter	Wire and wire products	09/88	237	Low wage country competition	54%
Greening	Hamilton	Wire rope	05/88	121	Offshore competition	76%
Donald	Midland	Wire rope		71	Offshore competition	91%
Inco	Sudbury	Mining	05/82 12/82	850 1,240	Demand declined/ Technological change	82% 56%
MacMillan Bloedel	Thunder Bay	Waferboard	01/89	115	Competition from other Canadian mills	91% ²
Planter's Peanuts	Toronto	Food Products	10/87	145	Rationalization	66%
Spartan	Campbellford	Electrical and electronic components	07/88	165	Loss of major contracts	65%

¹ Numerator includes found work, retired, relocated, in training, back to school, maternity leave and workers' compensation. Denominator includes all those requiring adjustment assistance. Denominator may not be total laid off.

² Although the percentage successfully adjusted was high, many found jobs at wages up to 25 percent lower than their previous earnings.

Source: Canada Consulting case studies.

who had permanently lost full-time jobs between 1981 and 1984.⁵ Its most important finding was that people who had lost a permanent job because of layoff had rates of unemployment in 1986 of 25 percent, more than double the rate of unemployment in the labour force as a whole.

It is also significant that many of those who did get new jobs received lower wages than in the jobs they lost. Only 17 percent took some form of training or retraining, while 17 percent relocated to find a new job. Most switched industries to find new jobs. Only 30 percent of those who experienced permanent job loss found new full-time employment in the same industry. Most of the shifts to lower-wage employment were associated with the loss of manufacturing jobs and the move to service sector jobs.

Research in this area also indicates that when inter-industry mobility decreases because of an economic slowdown, unemployment rises.⁶ Displaced workers who stay in their same industry tend to become unemployed far more than those who change industries, whether they find new employment or not. Older workers and those who experience involuntary job loss are

EXHIBIT III.10

Percentage of Unemployed Who Lost Jobs



Source: Statistics Canada, *The Labour Force*, 1981-89.

⁵ Garnett Picot and Ted Wannel, *Job Loss and Labour Market Adjustment in the Canadian Economy*, Ottawa: Statistics Canada, 1987.

⁶ Surendra Gera and Syed Sajjadur Rahman, *Sectoral Labour Mobility and Canadian Unemployment: Evidence from the Microdata*, Ottawa: Economic Council of Canada, 1990.

Highlights of a 1986 Study of Workers Permanently Displaced in 1981-84

Approximately 300,000 workers in Ontario lost full-time jobs (and were not recalled) during the 1981-84 period

On average, finding a new job took almost half a year, but this varied enormously. One-quarter found a new job within three weeks, while 10 percent took longer than one year

The largest (36 percent) single cause of permanent job loss in Canada was firm closure or relocation

On average, new jobs paid 7 percent less (not counting inflation) than the lost jobs. Older workers and those with low levels of education were more likely to take larger pay cuts

Workers with the highest incidence of job loss were young (age 20-34), those with less than three years job tenure, and those who worked in construction, mining, and parts of the manufacturing sector

17 percent of permanently laid off workers took retraining following their job loss; only 5 percent took government-sponsored training

72 percent of workers found full-time jobs some time after layoff, and 15 percent found part-time jobs. However, many subsequently lost or left these jobs so that by 1986 only 57 percent of the permanently laid-off were employed full-time and 6 percent were employed part-time

17 percent moved to look for work but only 2 percent received government assistance to move

The unemployment rate of permanently laid-off workers, even those with a long and stable previous work history, was 25 percent - more than double the rate for the labour force as a whole

Only 30 percent of those who found new jobs did so in their same industry. Approximately 45 percent of workers who lost jobs in goods producing industries found new jobs in service industries.

Source: Garnet Picot and Ted Wannel, *Job Loss and Labour Market Adjustment in the Canadian Economy*, Ottawa: Statistics Canada, 1987.

less mobile and bear a disproportionate share of the unemployment burden. Their ability and willingness to change industries is linked to their desire to retain their accumulated skill assets. This speaks to the need for assistance to workers for retraining to facilitate inter-industry mobility. However, as the previous study indicates, workers who do change industries frequently take a significant cut in pay. In many cases, especially when the worker is older, strategies to become re-employed within the sector where they have accumulated skill and will not require major retraining are preferable.

However, the norm in most sectors is strong mobility in and out of the industry. A 1985 study of labour adjustment in the automotive industry examined the movement of auto workers between 1978 and 1983, a period during which the automotive labour force in Canada grew from nearly 117,000 to higher levels and then dropped in the recession to just over 105,000. During this period almost 93,000 workers were found to have entered the industry from outside (other industries, previous unemployment, or from outside the labour force). Of the nearly 104,000 who left the automotive labour force, over 80 percent were employed elsewhere at the time of the study, 4.5 percent were unemployed and

collecting Unemployment Insurance (U.I.), and just under 15 percent had left the labour force or were unemployed without being eligible for U.I.

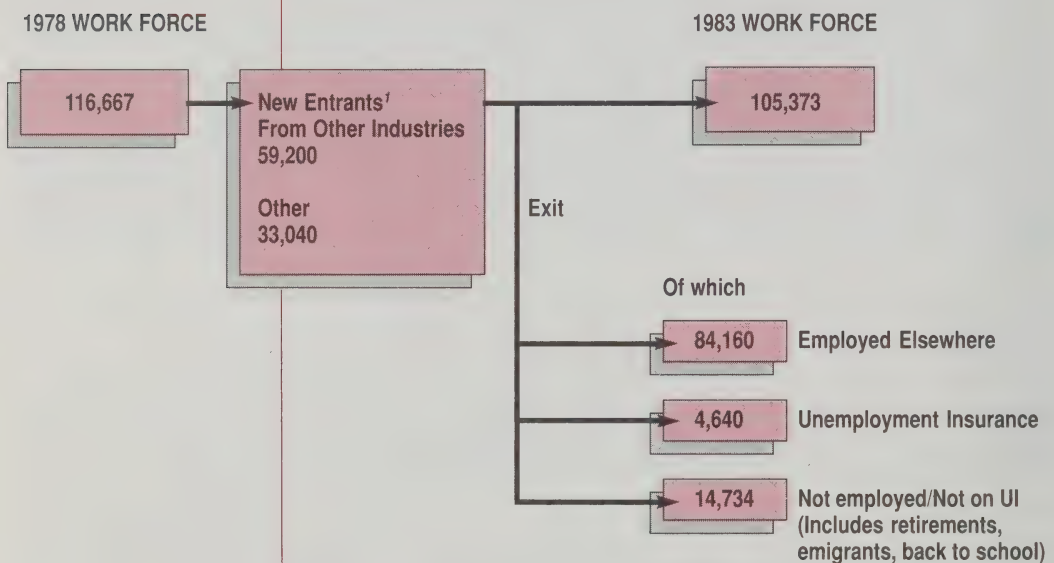
The Advisory Council on Adjustment (1989) reported even more extensive movements in the chemical industry over the same period. In that industry, 9,000 workers ended up on U.I. and a further 23,400 appear to have left the labour force. A significant level of interprovincial mobility was also evident.

Although mobility within the labour force is a constant and sometimes healthy process both for the individuals concerned and for society as a whole, laid-off workers forced to take new jobs at lower wages, combined with significant involuntary unemployment and underemployment and large numbers of labour market drop-outs, are strong signals that the adjustment process is not working well. Successful adjustment should see people moving rapidly into new jobs that bear a reasonable relationship to their career expectations.

A critical factor in the ability of individuals to adjust is the extent of unemployment in the economy as a whole. Those who lose their jobs will have a very different experience if the overall unemployment rate is low and jobs are expanding. Favourable macroeconomic conditions will allow for the continuous creation

EXHIBIT III.12

Inter-Industry Mobility in the Automotive Sector 1983 Status of the 1978 Workforce, Canada



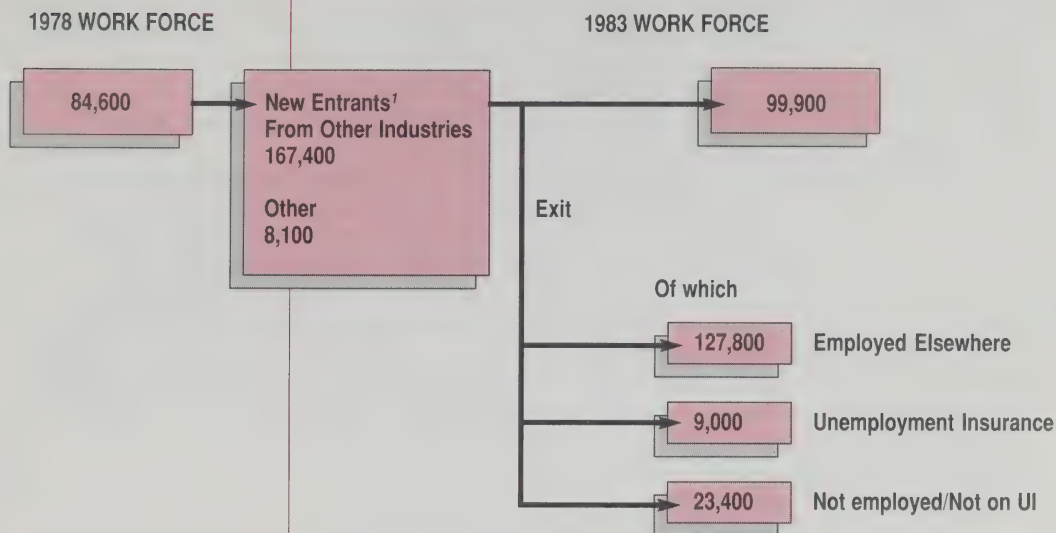
¹ Some of new entrant work force was laid off between 1978 and 1983.

Source: CEIC Automotive Labour Adjustment Study for the Automotive Human Resources Task Force, 1985.

of new opportunities for those needing a change in job, location or skill and will increase the likelihood that all potentially productive people will remain in the labour force.

Evidence suggests that the re-employment experience of workers permanently laid off in Ontario as a result of job loss in the early 1980s was considerably better than for workers in similar circumstances in other provinces. This no doubt owes much to the lower rate of unemployment overall in Ontario and the strength of the Ontario economy relative to that of the other provinces in

Inter-Industry Mobility in the Chemical Sector 1983 Status of the 1978 Workforce Canada



¹ Some of new entrant work force was laid off between 1978 and 1983

Source: Employment and Immigration Canada, Research and Special Studies reprinted in *Adjusting To Win*, Report of the Advisory Council on Adjustment, 1989.

Canada. But Ontario still experiences its share of unemployment, particularly in the North, and these large regional differences in the experience of unemployment make it very hard for workers in some locations to face the possibility of job displacement optimistically.

GROUPS AT RISK IN THE ADJUSTMENT PROCESS

The transitions to new economic and employment opportunities are not always smooth. Even where jobs are available, the people displaced often lack the required skills to fit readily into new jobs. Furthermore, the adjustment process is far more traumatic for some groups than for others.

Certain groups can cope with job displacement much better than others. Research on job loss and unemployment has identified older workers, the unskilled and those with literacy problems, women, disabled people, recent immigrants and workers in single-industry towns as those hardest hit by workforce displacement.

Older Workers

Workers who are over 45 years of age tend to experience lower rates of unemployment than younger workers; however, older workers have an average duration of unemployment of about 25 weeks, double that for people aged 15 to 24. The Statistics Canada study of job loss referenced earlier found that older workers, especially those 55 years and older, who had permanently lost their jobs between 1981 and 1984 had the highest rate of unemployment in 1986 of all displaced workers. Furthermore, older workers who did find new jobs tended to take above-average pay cuts and were less likely to retrain or relocate.

Older workers are more vulnerable to adjustment because they are often concentrated in mature industries facing competitive pressures that necessitate restructuring or closure. Because older workers often have longer job tenure and more job-specific skills that do not transfer well to other firms or industries, their

adjustment is more difficult and personally costly. They may have to bear the high costs for their own retraining, both in terms of time and money, and receive fewer benefits because of the shorter work span remaining in their lives. The severe income reductions older workers experience when they lose their jobs are frequently aggravated by employers defaulting on wages and vacation and severance pay owed when they go bankrupt, into receivership or they abandon or sell a plant.

The most effective retraining and adjustment strategy for older workers is one that begins before job loss occurs. Ideally, it should involve an internal adjustment to a new or related job within the firm. External mobility is more difficult for older workers to manage, but where it is inevitable they can benefit by adequate wage protection, severance pay, and effective employment and counselling services. Frequently, when the laid-off worker is approaching 65 years of age or is in poor health, there is very little value to that worker or society to retrain. In these cases, it makes more sense to assure that early retirement is a viable option.

Women

Women represent another potential high-risk group in the adjustment process. Women have higher rates of unemployment than men and, more important, tend to be concentrated in occupations and industries where wages are low, part-time work prevails and there are many small, vulnerable employers. Like older workers, women bear a disproportionate share of the adjustment fallout from the FTA and from technological change since they are over-concentrated in traditionally protected industries, such as textiles, where tariff barriers are now falling.

The labour market adjustment problems confronting women are several. Women face initial barriers to employment in high-skilled and well-paid non-traditional occupations. When they do have access to training, they are often encouraged to train for low-paid, traditionally female employment. Women with family responsibilities, particularly single mothers, must clear overwhelming additional hurdles to acquire adequate-paying jobs or to gain access to training programs because of the lack of adequate child care.

Results of a 1984 Ontario Ministry of Labour study of workers involving 21 firm closures in the early 1980s confirm that the adjustment experience was more difficult for women. While 38 percent of male respondents were unemployed at the time of the survey, 55 percent of women were unemployed.⁷ The study also showed that when laid-off workers found new jobs, men on average earned 9 percent less, and women earned some 20 percent less than they did in their former jobs. The study also revealed that traditional occupational roles were reinforced by workers' forced mobility; of those women who did find new jobs, one half were in clerical occupations compared to one quarter before their layoff. These findings were supported by a 1985 study for the Automotive Human Resources Task Force, which found that women who were laid off or subject to permanent job loss from the automotive sector experienced considerably longer bouts of unemployment than did men in the same circumstances.

The labour market problems experienced by women have

⁷ Ontario Ministry of Labour, *Labour Market Experiences of Workers in Plant Closures: A Survey of 21 Cases*, Toronto: 1984.

been the focus of considerable public policy attention over the past decade. Yet there has been only limited progress in addressing the disparity between male and female wages and the breaking down of traditional occupational barriers. Such barriers represent labour market inflexibility and are increasingly recognized as unacceptable on social and ethical grounds, as well as inefficient in stark economic terms. Increasingly, we must rely on our human resources — all of them — to face technological and productivity challenges, and the full participation and contribution of women is far too precious to limit or squander.

Low-Skilled and Disadvantaged Workers

Low-skilled workers and those with little formal education are also adjustment-sensitive. The problems of inadequate education, high dropout rates and illiteracy that were identified earlier in this report take on renewed significance in explaining why dislocation proves to be such a wrenching experience for certain groups. Workers with limited education are subject to both higher rates and longer durations of unemployment. Those who drop out of school to take full-time jobs are more likely to have problems adjusting to a layoff or to technological change. The combination of few transferable skills and low levels of basic education limits the ability of these workers to face the challenges posed by displacement. They require far more in the way of remedial education and training, as well as income support to make transitions possible.

Immigrant workers and visible minorities encounter different problems in the process of adjustment. These problems may be in the form of racism or other social barriers which prevent their realizing the full benefits of the education system and access to training and jobs. Lack of basic language abilities is another complicating factor in the adjustment process for both recent immigrants and non-English speaking Canadians.

Disabled workers also have a difficult time getting and holding jobs because of the particular barriers they face in the job market. Adjustment for these workers, as for other groups who are prevented from fully participating in training and employment opportunities, requires special attention to their needs for assistance over and above the conventional adjustment programs. For example, a disabled worker in a wheelchair will need special assistance with transportation to make a training program accessible. And efforts to find new jobs must be accompanied by a system of supports to make employment with a new employer both possible and desirable.

Workers in Single-Industry Communities

The ability of displaced workers in small communities and especially in one-industry towns to adjust is substantially more limited than for those who face job loss in an urban centre with many and varied employment opportunities. The federal government in a 1979 report identified 115 single-industry communities in Ontario. Most were in the wood products industries, mines and refineries. Resource-based industries are particularly vulnerable to fluctuations in commodity prices, exchange rates and economic cycles.

Workers faced with closures in single industry communities are especially hard-hit because they stand to lose substantial individual investments in housing and small businesses. The social

infrastructure of these communities, including schools, roads and health centres, can also be lost. There are likely to be far fewer employment opportunities and therefore far fewer employment-based training opportunities in these areas than in communities with a more diversified economic base. Relocation out of the community is one option, but this solution is more workable for those who are single and young than it is for more established workers with family responsibilities and strong community ties. The emotional costs can be high when families and friends are forced to move to find new jobs.

Several studies that have been done in Canada on worker displacement in one-industry towns highlight the need for planning for diversification well in advance of the closure of the main industry. This requires a profoundly different approach to community adjustment than the ad hoc, top-down planning that is now applied in these cases. The closure of a mine or plant can often be foreseen well ahead of time, yet often no preparedness planning is done. Effective community diversification must include planning far in advance, community-based approaches, the development of human resource strategies and access to financial resources for diversification.⁸

A 1989 report by the Canada Employment and Immigration Advisory Council described the plight of single-industry communities and identified some additional factors that contribute to successful economic diversification and adjustment:

- A comprehensive data base is essential in order to identify vulnerable communities, assess their needs and determine their adjustment and diversification capabilities.
- The most critical element in the adjustment and development strategy of single industry communities is the community itself. This means strong community involvement in local economic development, a realistic awareness of the community's resources and development potential, strong local leadership and supportive local attitudes and realistic expectations.
- The diversification and adjustment process must involve multiple stakeholders: all levels of government, community interests, major employers and unions. A coordinating role for stakeholders and program or service offerings should be played by government or an independent, community-based body – whichever is more appropriate.
- The benefits of community-based adjustment should not be confined only to those communities that are threatened or distressed.
- There must be a coherent policy, strategy or set of guidelines governing single-industry communities' adjustment needs. Communities need public policies that will support their efforts.

⁸ Michael B. Decter, *Diversification and Single Industry Communities: The Implications of a Community Economic Development Approach*, Ottawa: Economic Council of Canada, 1989.

In a society which attaches great value to having a job, the loss of a job creates a range of social, economic and individual problems that are profoundly felt by those who experience them. Financial hardship is only one dimension of the problem. Job loss frequently leads to unemployment, which has been linked to higher levels of marital discord, alcoholism, child abuse and poor health. Because it inevitably detaches a worker from normal social interaction with co-workers, unemployment adds a sense of isolation to the long list of factors that can cause self-esteem to plummet. The stress associated with the involuntary loss of a permanent job has been likened to a major life crisis, much like a divorce or the death of a family member.

The social and economic costs of unemployment and job dislocation on workers, their families, and whole communities are high. Because these costs are difficult to measure, they are often left out of the cost-benefit assessments of the restructuring process. In Canada, over \$12 billion a year is spent on unemployment insurance, the country's largest single income security program. But the costs of unemployment go far beyond U.I. expenditures. Studies in several nations have found that unemployment can be associated with higher levels of stress, crime and illness, all of which result in elevated public program spending for health care and policing. Lost productivity is another resultant cost that is probably significant but defies measurement.

The seriousness of these social, psychological, health and economic effects has been confirmed in studies of workers following Ontario plant closures at SKF (1981) and Canadian General Electric (1984) in Scarborough. At SKF, three out of every five workers reported that the closure changed their lives entirely, and two out of every five claimed that it took three to five years for their lives to return to normal.⁹ The health of workers who remained unemployed was significantly weaker than of those who found new employment. An important finding of the CGE and SKF studies was that the effects of the layoffs also extended to other family members, especially spouses. Both unemployed workers and their spouses reported significantly more ailments than did the rest of the Ontario population with a similar age, sex, education and employment status profile. Workers in both cases had significant notice of their impending layoff and as much labour adjustment assistance as is possible under current programs.

A number of U.S. studies support these findings, showing significant increases in unemployment-related deaths, suicides, homicides, psychiatric hospital admissions and incarcerations. The World Health Organization has sponsored numerous studies on the health effects of unemployment and job loss.¹⁰ The conclusions of this work point to the need for major policy changes to mitigate the effects of unemployment and job loss in all countries. OECD and British data provide further proof of the heavy social and emotional toll that unemployment takes on workers. When unemployment is coupled with inefficient adjustment processes, the consequences for some groups are serious and the costs for society as a whole are beyond calculation.

Knowledge about the profound social impacts of job dislocation helps reinforce the idea that if adjustment is to be a

⁹ J. Paul Grayson, *Plant Closures and De-Skilling: Three Case Studies*, Ottawa: Science Council of Canada, September, 1986.

¹⁰ World Health Organization, Regional Office for Europe, *Health Implications of Unemployment*, Copenhagen, 1985.

positive experience for workers, it must be understood in much broader terms than simply "finding another job". Because the adjustment experience can have adverse effects on a person's self-confidence, health and on the well-being of others, adjustment policies at the level of the firm and those developed by government need to be defined broadly and more holistically to include concerns for emotional and physical health, as well as economic well-being.

SOME ADJUSTMENT CASE STUDIES

171

While many of the pressures on the Ontario economy are macroeconomic, and while government policies can and do influence their impact, the adjustments that flow from them are made at the level of the firm. Three categories of adjustment can be identified: adjustments internal to the firm and internal to the community; adjustments internal to the firm and external to the community; and adjustments external to the firm.

The first category of adjustments, those internal to the firm and internal to the community, would involve the introduction of new technologies and/or products to the firm with a consequent elimination of older technologies and/or products. The demands of global competition and new technologies are forcing firms to innovate. One of the keys to innovation is adaptability. Firms facing these pressures need to change work structures, deploy new production technologies and apply new skills, sometimes very rapidly. One response, and perhaps the traditional one, has been to get rid of the plants and workers associated with the old product or technology and open up a new operation.

Another response typical of a small minority of Ontario employers is to manage change within the current workforce by broadening jobs, fostering the development of skills of general application and providing enhanced job security as a form of compensation for this increased flexibility. The “functional flexibility” of the latter approach offers advantages to employers facing a growing need for a stable highly-skilled labour force. However, a corporate culture of job security makes it difficult for employers to adjust employment levels in response to cyclical changes in activity.

The second category of adjustments, internal to the firm but external to the community, raise a different set of problems. Typical of such changes would be a decision to move production from a plant in one country to a plant in another country. While these changes may be responsive to external pressures, they are driven by internal corporate strategic considerations. Internal adjustment is only an option before the decision is made. And while there may be workers as well as corporate owners who are “winners” as a result of change, those “winners” are somewhere else.

In the third category of adjustments external to the firm, the issue is much simpler. The employer is getting out of the business. For the most part, adjustment boils down to dealing with casualties from the process. In some cases, however, externally driven change creates new possibilities, such as employee ownership.

For both the individuals concerned and for Ontario’s general economic good, adjustment internal to the firm is by far the

The Internal Adjustment Strategies of Four Firms With Ontario Operations

COMPANY	LOCATION STUDIED	INDUSTRY	NAME OF POLICY	INTERNAL IMPLEMENTATION GROUP
The Co-operators Group	Across Canada	Insurance, Computer Services	Employment Security — No layoff	Decentralized Responsibility Human Resources Department Facilities
IBM	Ontario, Quebec	Computers	Full Employment	Resource Committee/ Group Resource Directors
Ontario Hydro	Ontario	Utility	Employment Security	Directorship of Redeployment
Digital Equipment Corporation (DEC)	Worldwide	Computers	Employment Security	Transitional Task Force

Source: Canada Consulting, based on industry interviews and published sources.

preferred approach. Employment relationships with a strong commitment to labour and management cooperation are an essential ingredient of a successful labour adjustment policy. Public policy has a role to play in fostering a sound basis for such cooperation and in providing direct support in the form of training and other adjustment assistance.

As part of its research program, the Premier’s Council investigated several cases of major labour adjustment. Among the cases examined were examples of internal adjustment practices of individual firms and several large scale layoffs where external adjustment was required. The Council also received information on several innovative programs that have been established on a community and sector basis. The following brief description of these cases highlights how companies, workers, communities and governments can approach the adjustment process and offers some possible responses to adjustment when firms close, downsize or undergo internal change.

INTERNAL REDEPLOYMENT

Most large companies want to be able to retain the flexibility of layoffs to accommodate changes in parts of their operations. Employees naturally fear threats to their livelihood and are resistant to change, however necessary for the organization. Although organizations ultimately need productive and committed workers, the development of such a workforce will be undermined if layoffs are a constant threat.

The preferred method of adjustment for most workers is to remain with their firm and change jobs internally. A few Ontario companies have adopted no layoff or employment security policies to improve workforce commitment to productivity and flexibility. These models of internal adjustment are much more common in countries like Japan and West Germany, where the corporate culture and industrial relations environment are quite different from Canada’s.

Four Ontario firms that rely on internal redeployment of workers were examined in the course of the Council’s research: The Co-operators, Digital Equipment Corporation (DEC), IBM and

Ontario Hydro. The industry sectors represented by the four firms studied varied, as did the terminology used to describe their policies. Companies used terms like employment security, full employment, no layoff and no forced severance to describe their internal redeployment policies.

The origins of these no layoff policies are as varied as the firms who subscribe to them. For some firms, the policy is a matter of company culture; in others it grows out of a sense of social consciousness. In most of the firms, employment security is a way of sustaining growth and gaining employee commitment at the same time. What the four companies studied had in common was a sufficiently large and diversified employment base to allow for internal redeployment.

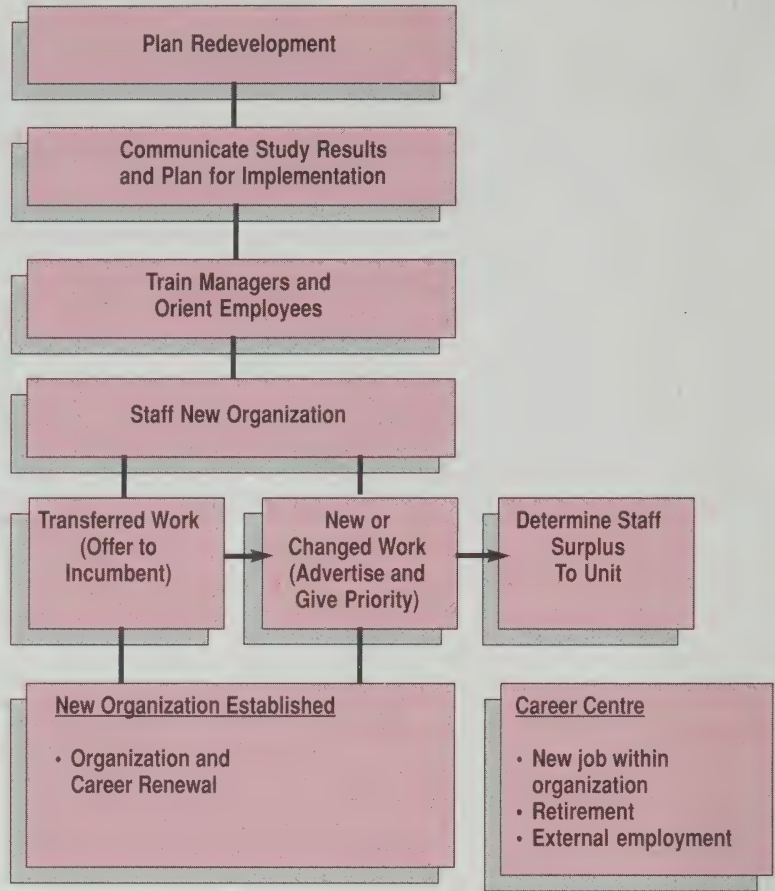
IBM has an international reputation for its policy of “full employment”. This policy was established by its founders more than 75 years ago and is now rooted in a corporate philosophy of enlightened self-interest. The security and benefits it provides to its employees helps IBM maintain a level of skill and productivity that make it the world leader in computers. IBM Canada, with plants in Ontario and Quebec, operates with the same corporate philosophy as its international parent. The three fundamental principles of the corporation’s human resource strategy are to treat people well, to pay for performance based on merit and to promote from within.

The full employment policy is a commitment to employment security for the individual, not job security. Rapid and major changes are endemic to the computer business and employees are expected to be learning constantly, flexible and willing to move. There is no guarantee of no layoffs, but there is a commitment to not using the layoff option for adjustment. Employees for their part must make every reasonable effort to adjust. The nature of the computer business requires that IBM invest considerably in training and development, a commitment which is not reduced during downturns. In the current stressful times in the global computer industry, IBM’s policies are being put to the test.

A key factor in IBM’s ability to manage this employment security policy are its philosophical underpinnings:

- **The value of the individual** – the belief that its employees can and should be retrained for new tasks when jobs change or are eliminated;
- **The value of change** – redeployment is seen as part of the process of meeting changing business needs as well as changing employee needs;
- **The idea of mutuality** – employment security is the result of a partnership between employees and management, requiring shared commitment and responsibility;
- **The contention process** – management can raise and reconsider issues with operating groups which may be acting in ways inconsistent with employment security;
- **Resource balancing** – this relies on a wide variety of mechanisms, such as work scheduling, minimized hiring, sub-contracts, temporary assignments and overtime, all of which permit the company to protect its core workforce over the long term.

Ontario Hydro’s long-standing practice of providing a large measure of job security has been supported by 25 years of sustained growth. In 1988 Ontario Hydro was faced with a massive internal



Source: Ontario Hydro

restructuring to reduce costs. It was anticipated that, through internal reorganization and a flattening of the organizational hierarchy, as many as 2,500 technical and administrative support staff jobs would be eliminated (about 10 percent of Hydro's workforce), while a comparable number of jobs would be created in other areas of the organization.

Ontario Hydro's philosophy of continuing employment is sometimes complicated by the fact that the utility is largely an engineering organization geared to building and setting up projects. In 1982, a major restructuring resulted in plant closings and downsizings, an experience that led to strained union-management relations, a strike, many retirements and some layoffs. The corporation became identified with a new lean and mean cost-cutting strategy, the results of which were perceived to be not entirely favourable to its business interests.

A new human resource philosophy was subsequently developed to include a commitment to employment security, no forced severance, multiskilling, voluntary incentives, retraining and redeployment. In November of 1988, a working strategy and redeployment model were approved and a redeployment function was established with three full-time staff. The redeployment strategy is a sophisticated six-step process, beginning with a

redeployment plan and culminating in a new job within the organization, retirement or external employment.

The plan's main elements that make employment security possible are:

- Extensive redeployment planning at the level of each branch – involves hiring freezes, temporary contract employees which act as a buffer, retirement incentives or buyout severances, retraining plans or job or work-sharing;
- Training for managers in fair redeployment selection and communication to workers;
- Employee information and training – provided to employees to keep them informed of plans as they develop and to allow them to be active in managing their career search;
- A career centre – established to assist employees in making career decisions and to improve their skills in job search;
- Organization development – builds team work and enhances understanding of the new organizations within Hydro.

The **Digital Equipment Corporation (DEC)** has had a longstanding employment security philosophy for its core employees. The 1970s and 1980s saw DEC grow rapidly with an emphasis on high-volume production capable of matching strong customer demand. To meet the often strong surges in demand, the company would hire temporary and contract employees, constituting 20 percent and sometimes reaching 50 percent of its workforce. In surplus situations, temporary and contract employees would be let go or the company would create temporary assignments around plants or arrange temporary transfers to other plants, build inventories or sustain short-term inefficiencies to maintain employment security.

Over the past decade, the employment commitment of DEC was put to the test. The company found itself a high cost producer because technological changes due to the miniaturization of components reduced unit costs while staffing remained high. Meanwhile, sharp downturns in the product market resulted in declining profits and a crisis in the company's stock. In response, the company instituted a "transition" process, the goal of which was to reshape the human resource profile of the firm without resorting to layoffs.

As part of the transition process, the company initiated a hiring freeze and eliminated all contract and temporary positions in order to avert layoffs. A task force was established to develop corporate-wide guidelines and to manage the plant-level process of transition. Three stages were involved:

- Identification and selection of people available for transition at each plant (performance rather than seniority was the primary criterion);
- Counselling and training in the form of a two-week program to help employees deal with the shock of being declared redundant, and to teach career choice and development skills;
- Exit from transition through transfer to another job at DEC or departure from company.

The results of the experience were mixed. Reductions in employment levels in DEC worldwide from 1984 to 1986 amounted to 5,598, of which 71 percent were regular (core) employees. Of the 2,606 employees who participated in the transition program, 41 percent had left the firm by June 1986,

39 percent had transferred within the company and 20 percent were still in the program. Many of the reductions were made through voluntary separation programs for regular, temporary and contract employees. A small percentage took retraining, and many slots were left unfilled.

Evaluation of the DEC experience points to the difficulty of maintaining an employment security commitment in the face of a more competitive and uncertain business environment.¹¹ First, the costs of the policy were very high. Second, it was clear to those involved that, in order to avoid such a crisis in the future, major changes in the way the company managed its business would have to take place. The contribution of the process to flexible redeployment was less than expected. This has been attributed in part to the relative lack of a corporate culture that valued a readiness to change and accepted new job assignments.

The Co-operators Group operates with an employment security policy in its family of insurance and related companies. Even when buying new companies, commitments are made to retain existing employees. This commitment has strong roots in the social consciousness underlying many co-operative businesses in Canada. A key component of the employment security policy is to encourage staff to take responsibility for their careers and to facilitate transfers among the companies in the group, which give existing staff priority over external hires. For instance, staff in the insurance operations may be transferred to the computer services company. One idea which has had some measure of success when employees have to leave the firm is to use severance pay for seed capital for the establishment of co-operative businesses.

Internal Adjustment Strategies Evaluated

A key factor in the ability of a firm to maintain a no layoff or employment security commitment is size. Large employers are much more capable of redeploying workers and reducing attrition than are small firms.

The success of no layoff policy also depends on a climate of acceptance of change on the part of new employees and management. Both must meet certain obligations. The firm's responsibilities generally include bearing all training and retraining costs, creating a unit or centralized task force charged with carrying out the policy in all its aspects (i.e., redeployment, retraining) and providing generous severance packages if all else fails. The employees' responsibilities include matching and endorsing the company's commitment to employment security, demonstrating a willingness to retrain, relocate or accept reassignment to another occupation or division within the same or a different plant, and if all else fails, leaving the company. Above all, to be successful an employment security policy has to be part of an ongoing planning and organization phenomenon, not just a response to crisis.

Companies can institute internal redeployment policies in a variety of ways. Some resort to buffering the core workforce by hiring temporary and contract employees who can be let go more easily than permanent employees when a downturn occurs. (This is a common practice in Japan.) Allowing for normal attrition without subsequently refilling vacant positions is another

¹¹ Thomas A. Kochan, John Paul MacDuffie, Paul Osterman, "Employment Security at DEC: Sustaining Values Amid Environmental Change", *Human Resource Management Journal*, Summer 1988, Vol. 27, No. 2, pp. 121-144.

method of maintaining a no layoff commitment. Early retirement policies and work or job-sharing arrangements also make no layoff policies possible. (This is often the practice in West Germany.) Other practices include having employees agree to take pay cuts for some period of time, creating temporary assignments or transferring surplus employees to other plants on a temporary basis, reassigning permanent or full-time "surplus" employees to other jobs within their current plant or division or to other plants or divisions and introducing voluntary job-leaving incentives. Key components of these strategies are making counselling, training, and where necessary, severance pay available.

The main conclusion that arises from an examination of these examples of internal redeployment is that, even with a high level of commitment, firms are hard-pressed to provide blanket employment security. In most cases, firms use a form of buffering their core workforce by using temporary employees that they can let go when needed. However, the extensive use of mobile contingent labour to maintain a stable core of workers raises serious questions about the no layoff commitment. Some employment security policies simply shift insecurity into the external labour market. Although retirement incentives may be voluntary, there is some reason to believe that it is "chosen" by employees at least partly out of fear of adverse consequences.¹² The reality is that many firms with employment security commitments are still forced to shed substantial amounts of labour.

Nevertheless, employment security commitments, in contrast to traditional layoff practices, are very effective and worth emulating. They reflect an important move toward a salaried model of employment which is more consistent with the demands of competition, new technology and functional flexibility. But they are only part of the solution to the problems created for workers by economic change. The costs to individual firms of such a policy can be enormous, and it is clear that it takes a special set of values and a unique employee-employer relationship to be even partially successful. We know that, by and large, employers underinvest in training because of the fear that workers will walk away with the investment. Yet a high level of training is a key requirement for a successful internal redeployment strategy.

COMMUNITY-BASED EXTERNAL ADJUSTMENT*

The external redeployment of almost all the Firestone workers who were displaced when the Hamilton tire plant closed its doors offers a rare and instructive example of the effectiveness of a community-based approach to large-scale labour force adjustment. On July 15, 1987, Firestone headquarters in the U.S. announced that its Hamilton plant would be closed on January 15, 1989, putting 1,286 employees (1,062 hourly and 224 salaried personnel) out of work. The layoff announcement was typical of many large plant closures. But what followed after the announcement was anything but typical of how most closure situations unfold. Firestone's relative success stemmed from a combination of factors:

- **Long lead time** – The eighteen months' notice of closure allowed for early and adequate preparation for adjustment.
- **A supportive and responsible company** – The company offered full cooperation and assistance to its workforce. All

* External adjustment includes both voluntary job-leaving and layoff. The Firestone case clearly represents the latter.

¹² Paul Osterman, *Employment Futures: Reorganization, Dislocation, and Public Policy*, New York: Oxford University Press, 1988.

salaries owing to workers were paid and accommodation and equipment costs incurred by workers in the course of adjustment were also covered. Only those training and personal counselling costs available through government support were not paid by the company.

- **A supportive and responsible union** – Union representatives appointed to the adjustment committee were trusted and respected by workers and other stakeholders involved in the adjustment process.
- **Effective government intervention** – The federal and provincial government worked well together in marshalling the public resources available for training and counselling necessary to enhance re-employment prospects.
- **An approachable and receptive business community** – Business leaders were made aware of needs, skills and qualifications of the Firestone workers, and responded with job offers. (The fact that the Hamilton economy was also on the upswing at the time was a major factor in assuring that job offers were possible.)
- **Strong media allies** – The media played an important role in communicating the high level of skills and needs of Firestone workers to the public and rallying community support.
- **A good communications program** – Media opportunities on television and radio, billboards, and newsletters were among the communication tools used to broaden awareness of the Firestone situation and advertise employees' availability for new work.
- **Thorough job search and counselling** – Questionnaires were developed to create an inventory of skills and a skills cross-reference list was then developed and mailed to prospective employers. Job interviews and resume writing classes were also arranged.
- **A skilled workforce** – The fact that the Firestone workforce had good training and was for the most part skilled contributed to the re-employability of the workers.
- **A highly motivated adjustment committee** – Committee members representing all the stakeholders — management, labour, the community, and both levels of government — worked effectively as a team.

All the ingredients for successful adjustment came together in the Firestone case where an estimated 95 percent of laid-off workers were redeployed in other jobs in the community, retired or in training. The slogan developed by the adjustment committee reflected accurately the efforts of all those involved in helping the Firestone workers 'build a new future'.

The need to establish business and employment alternatives is especially appropriate as an adjustment strategy in communities that have traditionally relied on a resource base that is in decline or has undergone large employment reductions. One model of community-based adjustment that has shown some promise is the Sudbury Community Adjustment Project (SCAP). This is a private, non-profit corporation formed in 1986 with funding from Inco Ltd., Falconbridge Ltd., and both the federal and provincial levels of government. SCAP is a jointly sponsored labour adjustment and economic development body with the mandate to develop innovative programs in the community to serve both causes. The

budget for SCAP is \$5 million for the 3 years of the life of the project and has been allocated among five programs: community support, basic development and growth, employment development, tourism and hospitality and skill training.

After one year of operation, the business development and growth program of SCAP has produced some tangible results. Fifty new jobs were created, grants of \$230,000 have been matched by \$502,000 from the private sector, and investments have been made in the purchase of equipment and supplies and the renovation of buildings.

Several innovative sectoral efforts involving joint business and union representation have been created to deal with labour adjustment. The most interesting and well-established of these is the Canadian Steel Trade and Employment Congress (CSTEC), described briefly in the Training Section of this report.

Formed in 1985, CSTEC is a joint project of the United Steelworkers of America and Canada's major steel companies. The Employment and Adjustment Committee of CSTEC created the HEAT (Helping Employees Adjust Together) program to assist in the design and delivery of services in response to layoffs and shutdowns. CSTEC deals with the downside of the adjustment process — that is, when layoffs are announced, not before, and only with permanent layoffs, not short-term ones. In its employment adjustment role, CSTEC operates much like the Industrial Adjustment Service of the federal government attempting to secure services for displaced workers and find them alternative job placements. A key factor in improving the uptake of training for CSTEC's laid off workers was the granting of authority for workers in the steel industry to receive income support under Section 26 of the *Unemployment Insurance Act*. This allowed workers under notice to receive assistance and training before losing their job. (Ordinarily, a worker under notice is not considered unemployed and is not eligible for U.I. related training or benefits.)

CSTEC has been funded by member contributions and a \$20 million federal grant over 3 years. By October 1989, CSTEC had been involved in 19 projects and had dealt with more than 1,500 workers. CSTEC reports that its "successful" placement rate is 75 percent. The success of CSTEC has been attributed to a number of vital factors.

- An effective industry presence;
- Bilateral leadership to act for the employer and employee constituencies and claim ownership of the process, rather than "neutral chairs", as is the approach with the federal Industrial Adjustment Assistance Service;
- A focus on the individual and the choices open rather than the barriers faced;
- A flexible approach with an assumption of realistic outcomes;
- A recognition by companies that they can benefit by a major commitment to adjustment, which results in many companies giving longer notice of impending layoffs than required under law.

Examination of large-scale adjustment efforts can promote a better understanding of the key ingredients of a successful adjustment experience. Among these ingredients is the realization that, above all, the company and the union or employee

representatives must work together. The best structure is a workplace committee made up of employer and employee representatives, along with representatives of government and the community. Their prime motivation must be to achieve successful adjustment for every worker, and concern for the worker must extend beyond an initial placement to include follow-up and ongoing assistance when required. Committees need the commitment of people who are not only willing to work hard together, but whom the affected employees can trust. This is particularly crucial in cases where long-time employees are losing their jobs and are finding the whole experience debilitating for themselves and their families. The committees must also be adequately funded and have a chairperson who is well-connected and highly regarded in the community.

The importance of the committees to successful adjustment cannot be overstated. At the same time, the role and structure of adjustment committees should not be set in stone. In some instances, it may be important to have a neutral chairperson who has a profile in the community and who can help open doors for the workers affected. The experience of CSTECH suggests that joint labour-management leadership, where it is possible, may be the most productive.

The CSTECH experience also suggests that an approach of building the ability of workers facing layoff to help themselves may be more effective than simply making available the services of the labour adjustment consultants that have emerged in recent years.

Several other themes emerged from the case studies. Paramount among these is the importance of early warning of the plant closing. This allows those who can help and facilitate adjustment to ready themselves, gives the affected workers time to consider various options, and alerts the provincial and federal governments of the need to provide the range of necessary services. Effective diagnosis of the skills and abilities of workers with professional counselling and job placement and matching services are also very important. A major impediment in many layoff cases is the problems experienced in gaining access to federal training programs and both federal and provincial adjustment assistance.

Finally, individuals who are well-trained and have good, portable and flexible skills are more likely to weather the adjustment well. Skilled workers — machinists, tool and die workers and millwrights, for example — had very little trouble finding re-employment, but many of the difficulties encountered by other workers were the result of their lower skill levels, literacy and numeracy problems and sometimes a lack of English.

THE PRESENT LABOUR ADJUSTMENT POLICY FRAMEWORK

181

Labour market adjustment policies have to be viewed within the larger context of macroeconomic policy which influences overall employment levels, industrial policies which affect the development of specific sectors and firms, the education and training systems that influence skills development and the regulatory environment governing the way in which business and labour can operate. These are the primary policy mechanisms that influence the process of economic and labour market adjustment in Ontario. There are, in addition, front-line adjustment programs such as advance notice requirements, severance pay and adjustment committees that have been developed to deal specifically with the casualties of change.

Little can be done to smooth the adjustment experience if the primary mechanisms of the adjustment policy framework are not working well or work at cross purposes with specific adjustment assistance efforts. Unfortunately this is too often the case. As demonstrated earlier in this report, economic, industrial, education and training policies are critical determinants of whether adjustment is to be a successful experience for workers and for society.

THE GOALS OF ADJUSTMENT POLICY

Government policies to smooth the adjustment process are designed to achieve three basic goals: assure fairness, improve efficiency and promote social consensus. Labour market adjustment policies are required to ensure that the burden of adjustment is shared by all members of society, rather than heaped only upon those who experience job loss or displacement directly. Economic changes can do considerable damage to individuals, especially when these changes are unanticipated. Yet such changes are necessary and often work to the benefit of society as a whole.

Labour market adjustment programs are also justified on the grounds that they increase the efficient functioning of the economy. Adjustment assistance attempts to ensure that workers will be trained and will move to the most productive sectors of the economy as quickly as possible. Left to their own devices, firms and individuals will not necessarily make the most efficient adjustment decisions. Displaced workers cannot and should not bear the considerable costs of retraining necessitated by layoff, and firms cannot be expected to finance all worker training and relocation expenses since they cannot capture all the benefits themselves. Uncertainty on the part of both firms and workers about future recovery prospects and the risks involved in an

THE FEDERAL GOVERNMENT ROLE

investment in training will lead to underinvestment in training. All this adds up to a substantial case for government-financed assistance for training, relocation, adjustment assistance and information services in order to anticipate unemployment and allocate resources effectively.

The provision of assistance to workers by firms and by government promotes receptiveness to change. Without this sense of social security and support, workers would more likely resist the changes that contribute to efficiency and productivity improvements. The critical need for high-skilled and flexible workers can best be realized through a climate of cooperation between employers and employees. Without commitments to programs which alleviate insecurity, industrial relations are more likely to be strained.

The federal government plays the most significant role in facilitating labour market adjustment by virtue of its primary responsibility for economic matters. The largest single adjustment-related program is Unemployment Insurance, with \$2.7 billion spent in Ontario in 1988/89. Unemployment insurance provides primarily short-term assistance to people who qualify with a minimum of 20 weeks of insurable employment and who are without a job and actively seeking work. Sections 25 and 26 of the *Unemployment Insurance Act* also allow for the support of workers who are undergoing training or in job creation programs under certain circumstances. Recent changes to the *Unemployment Insurance Act* reducing eligibility for benefits will result in a reallocation of about 10 percent of U.I. funds under the new Labour Force Development Strategy to more active re-employment programs such as training.

The Canadian Jobs Strategy (CJS) is the framework for federal funding of training, mobility assistance, wage subsidies and job experience. Federal employment programs have had two main objectives for the past 25 years: alleviation of unemployment and helping the employment disadvantaged gain access to the labour force. There are very few provisions in the CJS for short-term training and adjustment assistance. There are six CJS programs with combined expenditures of \$331.1 million in Ontario in 1989-90. An additional \$45 million is spent on special assistance for people on social assistance. (For programs under the Canadian Jobs Strategy, see Exhibit II.14 in the preceding section on training.)

The federal government also provides counselling and placement services through Canada Employment Centres (CECs) throughout the province. Among employers and employees, these services have a poor reputation for effectiveness. Because employers are not required to list job vacancies with CECs, they have only a small information base on available jobs.

The two federal programs clearly designed to deal with displacement are the Industrial Adjustment Service (IAS), and the Program for Older Worker Adjustment (POWA). The purpose of the IAS is to work with all parties to the layoff to find resources and options for displaced workers. Through the IAS, the federal government makes funds available to set up labour-management committees and provide assistance where large layoffs occur. The committees are established only when there is joint labour-management agreement to do so. Some of the activities of the committees include strategic planning, job search and placement of

THE PROVINCIAL GOVERNMENT ROLE

laid-off workers and assistance to workers requiring training or relocation. Funding of IAS activities in Ontario increased from \$1.5 million in 1985-86 to \$4.5 million in 1989-90.

POWA was introduced to provide income assistance to workers who are 55 to 64 years old and have been in the workforce for 15 of the last 20 years. The preconditions which trigger the program support are quite restrictive: a major permanent layoff must be involved and there must be the expectation of severe hardship for a significant number of workers. These narrow requirements mean that funding is available only in the most extreme cases.

It is also worth noting that the federal Labour Code has a requirement to negotiate with workers on the deployment of new technology because of its labour displacement potential. British Columbia is the only provincial jurisdiction in Canada requiring such a process.

Federal labour market spending is highly concentrated on income security, a basic and necessary requirement, particularly for a resource-based economy that is subject to large seasonal fluctuations in production and is vulnerable to external cyclical changes in demand. There is a relatively small emphasis on active labour market policies that focus on counselling, training, information and other supports for a labour market faced with adjustment pressures. This relatively passive program emphasis is particularly inappropriate in Ontario, where there are serious skill shortages and unemployment is lower than in other provinces.

Ontario offers several types of direct labour adjustment assistance: training, adjustment services to firms and workers, counselling and the setting of standards regulating employment termination.

The *Employment Standards Act* mandates severance pay for workers with five or more years of service who are involved in plant closures involving 50 or more employees or are employed in firms with a payroll of \$2.5 million or more. The Act also requires that notice be given in the case of mass layoffs both to workers and to the Ministry of Labour. Companies are also required to supply the Ministry of Labour with information on the closure; such information includes the reasons for and circumstances surrounding the closure, who and how many workers are affected and any adjustment plans.

The Ministry of Labour's Employment Adjustment Branch also offers adjustment assistance to employers and workers facing layoff. This assistance is in the form of participation on a federal IAS committee. In addition, the Ministry shares the cost with employers of counselling displaced workers involved in large-scale layoffs. Counselling covers job search techniques, identifying training opportunities or making alternative choices, such as a decision to retire. Counselling services are also supported by the Ministry of Skills Development throughout the province.

Training programs account for the largest share of provincial assistance relevant to labour market adjustment. Most of the funding of provincial training efforts is channeled into the community colleges and apprenticeships. In firms the funding is shared by the federal government through the Canadian Jobs Strategy. The provincial adjustment effort is concentrated on training for employed workers.

However, two programs within the Ontario training framework focus exclusively on individuals who are unemployed or out of the labour force. Ontario Basic Skills covers the instruction costs for persons 25 years or older to acquire reading, writing and mathematical skills. TRANSITIONS is a program designed to provide training allowances for up to two years to unemployed persons 45 years or older who have been laid off and face major skill barriers to re-employment. The program has a particularly good track record and is recognized as a useful model for adjustment training.

To this array of direct adjustment assistance programming can be added programs such as social assistance, which provide income support to individuals and families when all else has failed or when Unemployment Insurance has been exhausted, provincial participation in the federal POWA program and its jurisdictional responsibility for the education system.

The provincial role in adjustment assistance is especially important with regard to the regulation of layoffs. However, with regard to programming, the provincial role is circumscribed by the dominant federal jurisdiction over labour market policy, even though it is not primarily concerned with what would be considered adjustment. The province does enter the fray to fill certain gaps in federal programming, and it is here that the provincial government has been effective in responding to situations that have not been adequately dealt with in the federal arena.

On the whole, the provincial government is a minor player in labour adjustment relative to the federal government. This is understandable given the larger role of the federal government in direct labour market programming, but unfortunate given the unique adjustment pressures in Ontario as a result of the FTA and other competitive factors. Ontario may have to view itself as a larger and more instrumental actor in the direct provision of labour market adjustment assistance in the province.

PROBLEMS WITH THE EXISTING LABOUR ADJUSTMENT SYSTEM

The key elements in the successful adjustment of dislocated workers include: early awareness and notice of impending layoffs; meeting of employer obligations, such as severance pay and outstanding wages; the provision of adequate income support; in the case of large layoffs, participation of management, labour, community and government in adjustment committees; a rapid response with effective vocational counselling, job search and job matching assistance; support services which help workers overcome the problems they experience because of job loss; flexible training and retraining services, preferably before layoff occurs; and mobility assistance.

Unfortunately, many of these ingredients are often absent from the labour adjustment process in Ontario, despite the substantial financial commitment to the cause on the part of both federal and provincial governments. The problems and failings are many.

- **Fragmented Program Delivery** – There is no clear distinction between the responsibilities of the federal and provincial governments in the provision of labour market adjustment assistance. Overlapping responsibilities for training and adjustment assistance and income support make the system confusing and difficult to navigate for those needing

assistance. Programs are often inconsistent and poorly integrated, problems which frequently prevent rapid responses and effective deployment of resources. Even in cases where an Industrial Adjustment Committee is formed, difficulties in getting the right resources for displaced workers persist because of the separate bureaucracies operating for each program. Fragmented delivery leads to sometimes illogical and counter-productive outcomes, such as unemployed workers losing their federal U.I. benefits for participating in provincial training programs.

- **Voluntary Compliance** – Employers are not compelled to take any action in cases of significant adjustment. The federal IAS requires only that both labour and management agree to establish an adjustment committee. Last year in Ontario there were 130 major layoffs reported to the Ministry of Labour, and in only 56 cases were IAS committees established. *The Employment Standards Act* states only that “the Minister may require” an employer to take actions, wording which is weak and also vague in terms of what actions, if any, would be required other than the reporting of the closure. The triggering of adjustment assistance levers is, furthermore, too discretionary to provide any assurances that sound adjustment measures will come into play.

In many cases, employers will simply choose to retain private counselling and placement services, but poor quality assistance to workers in such cases is the norm rather than the exception. In one recent case in Ontario, 700 workers were “assessed” in just one day by an American training consultant.

- **Declining Federal Commitment** – The federal government has reduced its financial commitment to labour adjustment measures, especially those directed to training and mobility assistance, as a result of the refocusing of labour market programs under the Canadian Jobs Strategy. Federal CJS spending in Ontario has declined by 36 percent since 1985. There have also been significant reductions in seat purchases for institutional training and in the purchase of apprenticeship courses, despite an especially strong demand in the province for the latter. Federal funding has increased only for the IAS and for the newer program, POWA.
- **Restrictive and Burdensome Eligibility Criteria** – Federal and provincial programs are characterized by overly restrictive and exclusionary criteria to establish eligibility. Access to these programs is far more limited than it would appear. Examples of this inaccessibility abound.

Most federal adjustment assistance is targeted to the long-term unemployed and severely employment disadvantaged individuals. Under the largest CJS program, Job Development, people must be unemployed for six months before they become eligible for training assistance. Yet those most urgently requiring that assistance are workers who are under notice of layoff or who are recently unemployed. Small communities in rural Ontario and northern regions are thus sometimes not able to provide sufficient trainees to qualify for CJS assistance.

1985-90 (\$ MILLIONS)						
	1985/86	1986/87	1987/88	1988/89	1989/90	Change from 1985/86 to 1989/90
FEDERAL						
Canadian Jobs Strategy	518.1	440.8	392.1	333.5	331.2	-36.1%
Social Assistance Recipients			26.5	41.0	45.0	
Industrial Adjustment Service	1.5	2.3	2.9	3.7	4.5	+233.3
Total CEIC	519.6	443.1	421.5	378.2	380.70	-26.7
ONTARIO						
Youth	175.1	206.7	194.0	147.0	127.5	-27.2*
Skills	50.0	50.0	100.0	118.4	118.4	+136.8
Total MSD	225.1	256.7	294.0	261.8	245.9	+9.2%

* Reflects the declining employment rate for youth and the corresponding drop in participation in youth employment programs.

At the provincial level, the Transitions program restricts its support to workers 45 years and older, thus putting an arbitrary wedge between younger and older workers who face the same difficulties. The Ministry of Labour will not in principle use TRANSITIONS training unless workers under 45 also needing training cannot get funding either from the employer or another source.

The federal Skill Shortages program funds training for a restricted number of designated shortage occupations. POWA is restricted to a small number of designated major layoffs, and the granting of assistance to older workers seems to be determined by administrative discretion.

The fact that federal mobility assistance has been restricted to workers in designated communities or to those filling shortages in a number of limited occupations adds yet another limitation to the adjustment program roster.

- **U.I. Regulations that Invalidate other Program Principles** – In 1985, the federal government changed U.I. regulations so as to define severance pay and the return of pension contributions as “earnings” from employment. Workers in receipt of severance pay thus have their U.I. benefits delayed and reduced accordingly. This change was introduced quite without regard to the fact that severance pay is considered compensation for loss of a worker’s principal asset — accumulated skill on a job — and the fact that pension contributions are savings. In some cases where displaced workers in single-industry communities had negotiated compensation for the loss of value in a home, this was considered income and benefits under U.I. were reduced.

This requirement for displaced workers to draw down their savings and assets before receiving U.I. benefits in effect turns an income protection program into an asset-sensitive welfare program.

This U.I. provision is also one of the key factors preventing federal CJS funds from being made available to workers who are most in need. By excluding laid-off workers from U.I. until they have spent their severance pay, these workers are also made ineligible for UI-associated training and retraining programs.

- **Programs Are Unresponsive To Local Needs** – Local advisory councils created by the federal government to advise on the CJS have expressed frustration over the unresponsiveness of CJS to local needs. Local employment offices were given authority to change relative program allocations at the local level, but this authority has been completely undermined by overall budget cuts. Mobility assistance is restricted to the Community Futures and Skill Shortages programs.
- **Programs Are Overly Bureaucratic** – A major impediment for employers is the time required to fill out program applications and other paperwork, along with the complicated nature of these requirements.
- **Inadequate Income Support for Trainees** – Because training allowances are very low, many people, including apprentices, cannot undertake long-term training or have to drop out after they start.
- **Limited Wage Protection** – There is inadequate protection for worker's wages in cases where employers go into bankruptcy or receivership, where they close or abandon unprofitable plants and where they continue to operate but refuse to pay orders for wages by Employment Standards Officers.
- **Limited Support for Alternatives to Closures** – Inadequate analysis of the problems in specific sectors makes it difficult for government to anticipate or respond quickly to crises. There are also no mechanisms for regularly and systematically examining alternatives to closures or mass layoffs before they occur. In the case of the Inglis closure in Toronto, the worker buyout option was initially pursued as an alternative to layoff, but because information on the company was not made available to the workers and the Adjustment Committee, and because of the lack of adequate support for a feasibility study, the response was slow and the option was ultimately abandoned.

Overall, the labour adjustment process is hampered by inadequate and ad hoc measures. In large-scale layoffs, notice is sometimes insufficient for adequate adjustment planning and implementation of assistance programs. This is especially troublesome in communities where a major layoff significantly disrupts its entire employment base and requires long-term planning to pursue alternative courses.

One of the major and worsening problems is declining federal resources. The motivation for these reductions is primarily a desire to reduce federal spending overall, but it is also based on the principle that labour market spending should be reduced in

periods of low unemployment. Admittedly, federal labour market policy is not designed to deal with most adjustment situations. Nevertheless, these reductions in federal spending on training fly in the face of the increased need for skills training, multiskilling and lifelong learning. These cuts are particularly severe in Ontario. Federal mobility assistance to the province decreased 8 percent from 1983 to 1989, yet pressures for labour market adjustment in the province have been increasing and the geographic mobility of industry is also on the rise.

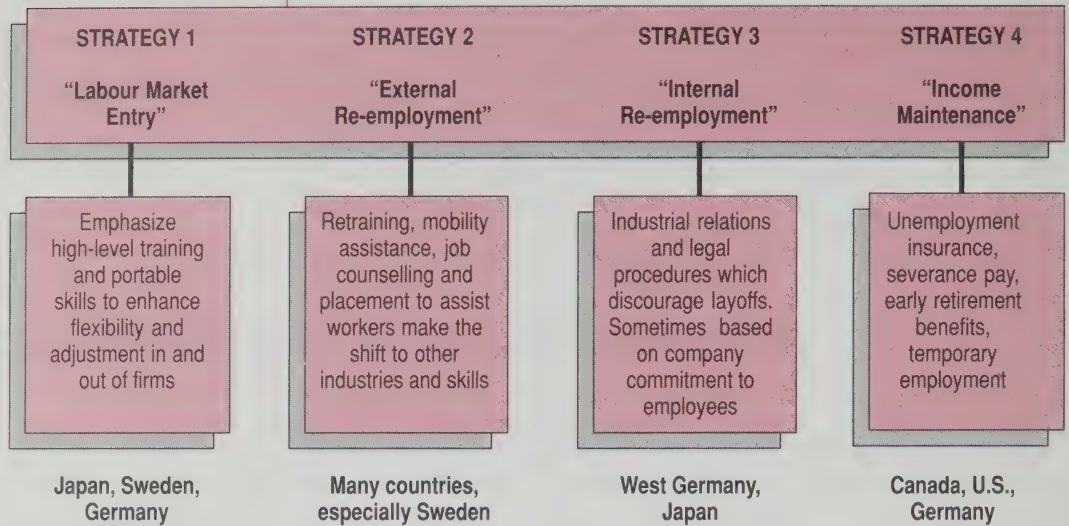
LABOUR ADJUSTMENT IN OTHER COUNTRIES

All industrialized nations have strategies for facilitating labour adjustment. This section examines the labour adjustment approaches of four countries: West Germany, Sweden, Japan and the United States. The first three are countries that have managed the adjustment process comparatively well. The United States is more like Canada in its approach to labour adjustment, although many of Canada's programs are more European-style than those of the U.S.

189

Comparative analysis invites readers to believe that a successful program in one country can be imported into another and expected to perform in the same manner. That is not the point of this exercise. Indeed, many of the programs that exist in other countries already exist in one form or another in Ontario. The lesson we should learn from looking at how other countries manage adjustment is not so much what programs we should import, but rather what should we learn from the framework of different countries that can help us improve our own.

Approaches to adjustment can be categorized four ways. All countries must manage the training and entry of labour into firms. As we have seen in Section II, training systems vary dramatically by country and in the extent to which they prepare workers with a high level of portable skills that will significantly improve adaptability and adjustment. Most countries, but particularly those with advanced labour market policies, use mobility-enhancing strategies such as retraining to propel displaced workers into other jobs or back into the workforce. All countries provide some form of protection for workers against income loss, most often through unemployment insurance, but also through the regulation of severance and other payments. Japan, Sweden and Germany are among the few nations where the redeployment of workers through internal markets — that is, keeping workers employed within their companies — occurs with any regularity and real success. While these elements are somewhat in evidence in all countries, they differ significantly in the extent to which one strategy is favoured over another. It should also be noted that the industrial relations climate that prevails in different countries will alter considerably the effects that the same kinds of programs have in diverse settings.



EXAMPLES

Source: Canada Consulting

WEST GERMANY

The starting point for understanding the West German approach to labour market adjustment is the structure of worker representation in the workplace and the legal regulations governing most aspects of employment. There are a small number of national industrial unions which represent all employees in an industry regardless of occupation. The interests of particular groups, such as skilled craft workers, are if anything subordinate to the interests of the labour force as a whole. These national unions bargain with national employer federations for wages.

Workplace issues such as working conditions, the introduction of new technologies, training, employment security, promotions and layoff procedures are the preserve of another institution — the Works Council — which is based in each workplace. These councils are elected by all union and non-union employees and are considered the representatives of the work force. Under the *Works Constitution Act*, all employers with more than 20 employees must recognize and consult with these councils on many workplace issues. In practice these councils are powerful and have a substantial role to play in determining how both internal and external adjustments are carried out.

The law on dismissals, collective agreement provisions and co-determination make it very difficult for West German firms to lay off workers who have been employed by the company for more than six months. Layoff plans, in the form of a social agreement, must be cleared by the plant's Works Council under employment protection legislation. If no agreement between the employer and the Work's Council can be reached, the Council can submit the plan to an arbitration committee for a binding decision. This committee must take into account not only the economic concerns of the firm but also the social concerns of the workers. Advance notice and layoff by seniority are also constraints on the ability of employers to reduce employment. This framework makes it difficult but not

impossible to lay off workers. However, the cost of layoffs to employers is so substantial as to make alternatives frequently more desirable.

While there are strong legal restrictions on layoffs, German employers do have some flexibility to reduce employment in response to reduced product demand or long-run structural change. Early retirement programs have been a major adjustment mechanism to reduce employment in failing sectors. Early retirement is supported through the unemployment insurance system by subsidizing some of the additional private pension costs to employers of employees who retire at 58 years or older and by a joint arrangement with the national pension system to provide "pre-pensions" to workers who retire at 59 years or older. One option introduced in 1985 for the chemical industry was for workers to take part-time retirement after the age of 58 and receive a top-up to 75 percent of gross pay. The pre-retirement option has been a major component of the German labour supply management strategy to cope with rising unemployment and the decline in manufacturing growth over the past decade and a half. It has recently been extended to all industries.

The West German unemployment insurance program has played an important role in allowing employers to reduce work time for a period of more than four weeks but less than two years (three years in the steel industry) due to reductions in product demand. This is, in effect, a part-time layoff, which offsets the decrease in employees' wages with unemployment insurance (in Canada, this is called work-sharing). Labour supply reductions have been a major method for the West Germans to adjust to changing economic circumstances. The other components of this supply reduction strategy are the well-known legal limitations imposed on the so-called "guest workers" in Germany and the less well-known lack of support for women in the labour force. (West Germany has one of the lowest rates of female labour force participation of any industrialized nation).

West German companies operate with a stable core of workers who have a great deal of security in their firms. This is linked in part to the investments that employers have made in the skills development of their workers. Much of the German social security system depends on fringe benefits associated with individual firms, which creates a strong incentive for workers to remain with their firms.

Another aspect of West German adjustment policy worth noting is the restrictions imposed on retraining. Eligibility for retraining programs tends to be limited to full-time core workers. Workers with marginal attachments to the labour force cannot generally get access to retraining programs. This in turn creates a disincentive to maintain a marginal attachment since gaining access to training benefits, which are substantial, is highly desirable. On the other hand, workers who become unemployed are encouraged to go into a retraining program because they receive a 10 percent premium on their unemployment insurance benefit for doing so.

The Swedish economy has undergone substantial restructuring over the past two decades. Significant reductions were made in the production of steel, iron ore and ships, the forestry and auto industries were restructured, and new industry growth was encouraged in high technology sectors with strong export growth such as engineering and chemicals.¹³

Recently the Swedish economy has experienced a breakdown in its traditional industrial relations stability in response to the largest economic crisis it has faced in the past several decades. Nevertheless, the restructuring that has taken place since 1975, combined with the experience of virtual full employment, an enviable record in productivity, trade and the deployment of new technology, make the Swedish example of labour adjustment a most useful one to examine.

The industrial relations framework in Sweden, as in Germany, determines in large measure the nature of labour market adjustment. The main element of the industrial relations system is the strength of the union movement, which represents over 90 percent of blue collar and 75 percent of white collar workers. Two national union federations, one for blue collar and one for white collar workers, bargain with the national employers' federation over national wage agreements which largely determine wage levels at the plant or workplace.

The 1974 *Employment Security Legislation* requires employers to provide advance notice of layoffs and requires that layoffs must proceed by order of reverse seniority. The 1977 *Law on Co-determination* requires employers to inform and consult with unions on all matters concerning job design, work organization, technological change and promotion procedures. This assures that nothing can happen in a firm without the agreement of the union. Long notice (six months) is required when layoffs of 100 or more employees is involved. If there is disagreement between the union and the employer as to how and whether the layoffs should occur, they can be delayed till a Labour Court rules on how they are to take place. The system that has emerged has created significant short-term inflexibility in the employment system. On the other hand, the absence of narrow job classifications, together with the broad public labour market policy system which emphasizes training to ease the flow of workers from declining sectors and firms to new growth ones, has made the Swedish labour market remarkably flexible in the long term.

The two notable elements of the Swedish industrial relations system are the willingness in the past by labour federations to exercise restraint in their demand for wage increases and the commitment to a common wage policy. The first is part of a social compact which sees labour attaining significant improvements in social security policies in exchange for wage restraint. (More recently, however, wage increases have supposedly contributed to the country's economic difficulties.) The famous Swedish welfare state, nevertheless, historically furnished a great deal of security for workers faced with mobility. The second is based on labour's desire to create as much equity in the wage system as possible. This commitment has led to Sweden's having exceptionally low differentials in wages between industries, occupations, and between men and women.

¹³ See *Competing in the New Global Economy*, Industrial Policy Studies, Volume 3, Chapter 2 for a description of Swedish industrial policies and restructuring.

The commitment to a national wage policy in the 1950s was the basis for the labour market policy framework that evolved. The key expectations of the commitment were that marginal firms would be forced out of business and that wage restraint in highly profitable sectors, such as automobiles, would increase their competitiveness. This policy of narrow wage differentials has also influenced the operation of internal labour markets. Narrow wage differentials between workers within firms lessened the need for narrow job classifications, and as a consequence, significantly increased the flexibility of labour in Swedish firms. Despite the legal requirement to consult with the worker representative group, there are fewer restrictions on Swedish employers in managing redeployment than in Canada. Consultation is almost always beneficial since it provides employers with information about skills and abilities. Once the consultation is completed, management is free to reassign or redeploy without much regard to seniority. This set the stage for productivity-oriented workplace reorganization (Volvo was the first large firm to introduce autonomous work teams) and the massive commitment to training that have been the foundation of the traded sectors of the Swedish economy.

Wage policy has also been instrumental in encouraging adjustment and the development of new firms by reducing resistance to change. Workers facing external mobility are assured that they will not have to suffer a large personal cost because the wages of any new job will not be substantially below that of the old. Security is also assured by the successful achievement of a commitment to full employment, by an active labour market policy which emphasizes training and by the renowned Swedish welfare state.

The main difference between Sweden and Germany is the extent to which Sweden provides security to workers through public supports, while Germany centres its security primarily in individual firms. The result is that the Swedish labour market is more flexible in terms of external adjustment, but also more dependent on public support than many nations would deem desirable.

One of the strengths of Swedish employment policy is its unique system of national and regional labour market boards. The National Labour Market Administration is the main body responsible for managing the labour market. The Administration is composed of the National Labour Market Board (AMS) and the regional labour boards. Regional boards determine local implementation policies and operate local employment offices and employability assessment centres. The main activities of the AMS and the regional boards are employment services, vocational training, mobility incentives and assistance and employment demand measures.

These programs make up the active labour market policy for which Sweden has become internationally recognized. The degree of spending on these public programs and the use of them is extensive. They are generally well respected by business and labour and are well integrated into the system of internal labour markets. The public employment system is seen by all actors as a critical part of the adjustment system in which emphasis is placed

JAPAN

on the use of active rather than reactive or passive programs. The administrative structure is effective because it does not suffer from overlapping jurisdictional problems and is also decentralized to respond to local labour market needs. Unemployment benefits are provided by a separate administration from the trade unions controlling the rest of labour market programs.

The industrial successes of Japan are legend. A key factor in the successful restructuring of Japanese industry is the government's management of the process. There is a long tradition of government intervention in the Japanese economy to speed innovation, provide investment incentives, assist in labour retraining and offer other services to assist in the adjustment to new products and more productive enterprises. The powerful Ministry of International Trade and Industry (MITI) operates through a system of "administrative guidance" to influence the investment process, trade, the supply of raw materials and the internal operation of industry, including the management of dislocations. The role of MITI is accepted by industry as legitimate and in its long-term interest.

Approximately 35 percent of the Japanese labour force belong to unions, but they are organized on a workplace basis and often have management involved. Workers have a strong sense of identification with their firm, a cultural reality which is reinforced by the system of lifetime employment (Nenkei). The value assigned to worker training, which is conducted mostly in-firm, and loyalty are considered major assets by Japanese employers. However, this system applies only to core employees in large and medium-sized firms, which make up less than half of the Japanese workforce. Women and most workers in small businesses are excluded.

When employment reductions are required, part-time employees are laid off first and every attempt is made to avoid the dismissal of permanent employees. The permanent employment commitment guarantees large severance payments. The result is that the costs of adjustment are internalized and employers have strong incentives to develop flexible redeployment mechanisms, such as mobility within the firm and retraining. This creates some inflexibility in the way Japanese employers can manage the size of their workforces. However, this inflexibility in the ability to let go of core employees is more than offset by the flexibility that comes with highly trained and adaptable workers.

Japan has an active industrial policy, but it also has a relatively small public commitment to employment policy and income security. Employers have the primary responsibility for training, retraining, and reallocating labour, and most social benefits are workplace-related. Redundant employees are often transferred to other divisions of the same firm, to a subsidiary, to an affiliated company in the same industry sector or to the firm of a supplier. In recent years, however, the large social costs of adjustment have become more apparent, and new public policies to cushion the effects on workers have been adopted.

The Japanese unemployment insurance system is designed to enhance structural adjustment. It is closely tied to the training

system, and benefits are contingent on a worker's participation in retraining programs. Through the authorization of placement and training facilities and the tie in to unemployment insurance, the Japanese government has considerable scope in relocating workers from declining industries to growth industries nationwide.

The main plank of government policy to facilitate labour adjustment is the *Law for Temporary Measures for the Unemployed in Designated Depressed Industries*. This program provides up to one year's unemployment insurance to workers with at least one year of employment in a depressed industry. This program is of benefit mostly to workers in small firms. The Law benefits permanent employees in large firms by also permitting the Ministry of Labour to reimburse employers for some of the costs of relocation, retraining, severance payments, early retirement and the wages of newly hired employees from designated declining industries. The intention is to reduce the costs of adjustment to individual firms.

THE UNITED STATES

Labour market adjustment policy in the United States is neither broad-based nor systematic. In part this is because of the strong liberal laissez-faire approach to economic management in that country. It is also, as in Canada, due to the decentralized and fragmented nature of policy making with competing and overlapping federal and state agencies responsible for industrial and labour market programing.

Unemployment insurance is the main adjustment mechanism. U.S. employment policy is primarily directed to the poor. However, most evaluations of programs to improve the labour market prospects of the poor conclude that these programs have had minimal benefit because they are too narrowly focused and because participants are stigmatized in the minds of prospective employers.

The U.S. system lacks any formal mechanisms for ongoing business, government and labour consultation. This discourages far-reaching and strategic policy responses to adjustment. A commitment to liberalized trading environments has been accompanied by ad hoc responses to major adjustments based on the political strength of individual industries. Industry associations, with the help of labour, have argued for protection against allegedly unfair trading practices of other nations, especially Japan. Rather than using it to help restructure, government assistance has mostly been used to buy time to allow industry profits to remain high on the assumption that they will be invested in modernization. There is a relatively low level of unionization in the U.S., and unions have tended to align themselves with business in seeking assistance for particular industries.

In comparison with European labour markets, the American labour market is highly mobile. Notwithstanding the few exceptional companies like IBM and Digital, which have sophisticated internal security and adjustment commitments, when layoffs do occur in the U.S., the efforts of firms to assist workers to adjust is limited. Employers have few restrictions in their ability to lay off workers and downsize their workforces. Even advance notice of major layoffs was not required in most of the States until 1988. According to the United States Government Accounting Office, a substantial minority of employers do offer

LESSONS FROM ABROAD

some kind of severance pay to workers who lose their jobs as a result of a closure or permanent layoff.¹⁴ But employer-provided, help in finding new jobs is not common. Where it is provided it is more likely to be given to white-collar than blue collar workers, and it is usually restricted to job-finding assistance.

Nor is the public effort for positive adjustment extensive or effective. The main direct public adjustment assistance program in the U.S. is the federal Trade Adjustment Assistance Program (TAA). Under the 1974 program, TAA was intended to promote the positive adjustment of labour and capital. TAA can provide income assistance, training, job search, and relocation and mobility assistance. In practice, however, TAA has been used almost exclusively to compensate workers and firms for the costs of job loss due to foreign competition.¹⁵ Most of the assistance has been used as a form of unemployment insurance to compensate workers for income losses as a result of temporary layoffs. The program encourages firms to retain workers, but does not provide any incentive to retrain them or improve productivity. But there has been considerable restructuring in U.S. industry, despite the existence of assistance programs which have likely been counterproductive to adjustment.

Under the *Job Training Partnership Act* (JTPA) Title III, states and local service agencies can get federal assistance to organize and provide services for displaced workers before layoffs occur as soon as notice is given. In practice, significant delays of 3 months or more in getting JTPA funding are common, and there is very little awareness on the part of employers of what is available through publicly funded assistance.

Very few states are able to mount an effective rapid response when mass layoffs are announced. The Office of Technology Assessment estimates that only 20 percent of eligible workers were being served in the mid-1980s. While the introduction of advance notice legislation is expected to improve the adjustment process, unless the funds and the technical assistance are forthcoming, the benefits are likely to be limited.

Comprehensive adjustment assistance requires the help of government within a framework of public adjustment assistance policies. Although U.S. employers do have flexibility in their ability to shed labour, their flexibility in responding to adjustment challenges and productivity improvements is substantially impaired by the lack of business-labour-government consultation mechanisms that would allow for planned rather than ad hoc measures and by the lack of an effective public policy framework for labour adjustment.

Dramatic differences in the approaches adopted by different countries can be highlighted by comparing the relative commitment of public funds to income support measures versus re-employment measures. In Sweden, 69 percent of public expenditures on adjustment are committed to re-employment measures and 31 percent go towards income maintenance. In Canada, the proportions are opposite, with 75 percent of public funds being committed to income maintenance. Other countries fit somewhere between the two extremes. Only Australia among

¹⁴ Office of Technology Assessment, Congress of the United States, *Plant Closing: Advance Notice and Rapid Response*, Washington, 1986, p. 3.

¹⁵ Michael Trebilcock, *The Political Economy of Economic Adjustment*, Toronto: University of Toronto Press, 1986, p.136.

OECD nations commits a higher proportion of its adjustment assistance to income maintenance than Canada does.

How well different systems of labour adjustment work may depend on the industrial relations context in which programs exist. Sweden and Germany have national legislation that establishes workplace-based councils where labour and management are required to consult on workplace issues and employer freedom to lay off workers is much more limited than it is in Canada. Japan has a system of lifetime employment (at least for core workers in major industries) governed by cultural norms which also discourages layoffs. These highly defined legal and institutional frameworks governing labour-management relations might lead North Americans to believe that these labour markets would be rigid and inflexible. But this is not the case.

These countries have considerable flexibility in their internal adjustment capability. This flexibility hinges on the fact that there are fewer job classifications, promotion is based on merit and qualification rather than seniority, and the labour force is more able and willing to be reassigned both in the firm and outside of it. What makes this long-term labour market flexibility possible in these three countries is the belief in extensive, high quality entry level and on-going training.

The security provided to industrial workers in West Germany, Sweden and Japan is closer to the salaried model of employment than it is for industrial workers in Canada or the United States. In this sense, while West Germany, Sweden and Japan have a high degree of short-term inflexibility to reduce the size of their workforces, this is the basis for more flexible internal labour markets which are increasingly required in new organizational environments to use new technologies and

EXHIBIT III.18

Labour Market Expenditures as a Percentage of Gross Domestic Product, 1988

	EMPLOYMENT PROMOTION MEASURES	PERCENT OF TOTAL LABOUR MARKET EXPENDITURES	INCOME MAINTENANCE	PERCENT OF TOTAL LABOUR MARKET EXPENDITURES	TOTAL LABOUR MARKET EXPENDITURES
Sweden	1.79	69	0.80	31	2.59
United Kingdom	0.76	30	1.74	70	2.50
West Germany	1.05	44	1.35	56	2.41
Finland	0.90	39	1.42	61	2.32
Canada	0.52	23	1.59	75	2.11
Italy	0.90	56	0.72	44	1.61
Australia	0.30	23	1.03	77	1.33
United States	0.25	36	0.44	64	0.69
Japan	0.20	33	0.39	67	0.59

Source: OECD, *Employment Outlook*, July, 1989.

production techniques effectively.

It must not be forgotten, however, that the rigidities and inflexibilities of the job security systems in Sweden and West Germany benefit employed workers, but do little to permit those on the outside track to enter the workforce. There is chronic unemployment among those who are not under the wing of the employment security system and such unemployment has been attributed to employers' reluctance to initiate new hiring.

Paradoxically, a key element in making this flexibility possible is the fact that there is considerably more security for workers in these labour markets, at least for those who are permanent, core workers. In Sweden this security arises from more developed government employment and income protection policies which actively attempt to move workers back into new jobs as quickly possible after dislocation occurs. In Germany and Japan employment security derives from a relative inability to lay off and the provision of firm-related benefits. External adjustment does occur and has the support of government through early retirement or mobility options, but is generally seen as the last option to be pursued or necessary only under extreme circumstances.

By contrast, the American system of labour adjustment is ad hoc and often hampers adjustment rather than encourages it. Labour adjustment efforts are constrained by inflexibility in internal labour markets and a great deal of external flexibility. Employers in the U.S. are relatively free to lay off as they see fit, and the costs to employers of layoffs are relatively low in comparison with Germany, Japan and Canada. It has been pointed out that U.S. workers are double losers because a multinational faced with the need to downsize will pick a U.S.-based plant first because of the relative ease and the low cost of closures in the U.S. compared to Europe. On the other hand, U.S. internal labour markets are frequently inflexible in having numerous and rigidly defined job classifications and highly stratified organizations and wage structures, all of which which hinder mobility.

American public training programs are also often limited in scope and are perceived negatively by employers because of their low quality record and their focus on the poor. By contrast, Swedish and German training and retraining programs are aimed at a broad range of core workers who are employed as well as the recently unemployed, not just the long-term unemployed or the disadvantaged. Public employment policies in Europe and to a lesser extent in Japan are useful to employers. Public employment policies in the United States stand apart from the human resource policies of firms and are seen largely as irrelevant to their central concerns.

MANAGED CHANGE: A NEW FRAMEWORK FOR LABOUR ADJUSTMENT

Labour market adjustment is inevitable and can be a positive force if the changes that occur result in more productive opportunities for society and if the burden of change is shared equitably. Labour market adjustment policies play an important role in assuring that the potential benefits of technological change and restructuring are fully realized. Change will benefit society only if it is managed intelligently and effectively. However, the labour market adjustment framework at the federal and provincial level often manages change ineffectively. Most employers could also improve their human resource management, both to achieve higher productivity and to ease the burden of adjustment on individuals.

Policies to manage change effectively and fairly require much higher levels of cooperation among different levels of government, employers and workers. The need is not so much for new program commitments as it is for better management of existing programs, a bigger role for employers, workers, and communities in determining how program commitments should be handled, and the removal of restrictive eligibility criteria which make many potentially sound programs not very effective.

PRINCIPLES FOR LABOUR ADJUSTMENT

A number of principles have guided the Council's thinking about labour adjustment and form the basis for its recommendations in this area:

- Advance notice is the foundation of successful adjustment.
- Successful adjustment requires as much notice as possible to facilitate the preparation and implementation of adjustment programs.
- Adjustment without layoff through internal redeployment or restructuring of viable firms is the preferred option for both the worker and society.
- Successful external adjustment is not merely a matter of finding another job; it requires that standards of living and skill levels of those affected are maintained or improved, that there is job satisfaction in the new employment and that mental and physical health are not injured.
- Adjustment to job loss cannot be left to the market alone because some groups will suffer unduly. To be equitable as well as efficient, adjustment requires strong public policy support.
- A high level of ongoing training in industry to create a flexible labour force with multiple skills facilitates adjustment; however, sound adjustment programs are also necessary to ensure the success of training policies.

ADVANCE NOTICE AND RAPID RESPONSE

- Successful adjustment requires that notice trigger an integrated, comprehensive, flexible and accessible set of programs for all workers facing dislocation.
- Workers facing dislocation should be assured adequate income support and training options, especially access to training in English as a second language or basic literacy and numeracy training where necessary, to pursue new careers and jobs.
- Successful adjustment requires the involvement of all stakeholders, including workers and their families, employers, unions, communities and governments.

Large layoffs or firm closures are major shocks to workers and to labour markets. They require rapid response and special actions. Advance notice of an impending large change is a vital precondition to effective response. Time is required for individual workers, unions, employers, the community and governments to work together to assess needs, to analyze the skills and capabilities of workers, to determine if there are alternatives to layoff or closure, to find and use employment services and training, to survey other employers for alternative job opportunities and to follow up adjustment cases to see if they are indeed successful and sustained. For these reasons, advance notice is recognized as a key component of any successful large-scale adjustment experience. As noted earlier, the long notice provided in the Firestone layoff in Hamilton in 1987 was a critical factor in the relative success experienced in that case.

Employers sometimes fear advance notice because of the belief that it will induce a lack of worker motivation or lead to early attrition, especially of the most productive workers. These fears have proved to be largely groundless in the research conducted on advance notice in the United States. There is also evidence that a real social benefit can be realized with long advance notice because it allows for more effective planning that results ultimately in reduced unemployment insurance costs. In several cases reviewed, employers were willing to give notice far in excess of the statutory requirement; this was seen as possible and desirable for the firms that had long-standing commitments to fair and effective human resource planning.

Advance notice does not guarantee that adjustment planning will take place. Indeed, advance notice in the absence of adjustment planning may do nothing more than give workers more time to become anxious about their future. It is essential, therefore, that management and labour approach the exercise with goodwill and with a common commitment to the task of creating an effective adjustment program. Consequently, it is essential that the giving of notice trigger obligations on management and labour collectively and rights for individual workers that will strengthen that commitment and enhance the resulting programs chances of success.

Providing notice of technological change well in advance of that change taking place also facilitates adjustment immeasurably. Making the workforce a part of the process of managing technological change helps to head off any resistance to change that workers may experience in the absence of information about and understanding of the innovations being introduced. The provision of such notice to workers should result in the formation of adjustment committees.

The Council believes there is room to improve statutory advance notice requirements in Ontario. Two aspects of advance notice provisions bear reconsideration. One is the threshold number of employees to be laid off in order to trigger an advance notice requirement. Currently in Ontario it is 50. There is also the length of notice time that should be given. Currently, the

EXHIBIT III.19

Advance Notice Requirements in Canadian Jurisdictions

JURISDICTION	NUMBER LAID OFF	NOTICE REQUIRED	
Federal	50	16 weeks	
Alberta	50	1 week after 3 months 2 weeks after 2 years 4 weeks after 4 years	5 weeks after 6 years 6 weeks after 8 years 8 weeks after 10 years
British Columbia	Individual notice only	2 weeks after 6 months After 3 years, weeks of notice equals years of service, maximum 8	
Manitoba	50 >100 >300	10 weeks 14 weeks 18 weeks	
New Brunswick	25	(only if 25% of total) 6 weeks if covered by Collective agreement.	
Newfoundland	50 >200 >500	8 weeks 12 weeks 16 weeks	
Nova Scotia	10 100 300	8 weeks 12 weeks 16 weeks	
Ontario	50 200 500	8 weeks 12 weeks 16 weeks	
Prince Edward Island	Individual notice only	1 week after 3 months	
Quebec	10 100 300	2 months 3 months 4 months	
Saskatchewan	Individual notice only	1 week after 3 months 2 weeks after 1 year 4 weeks after 3 years	6 weeks after 5 years 8 weeks after 10 years
Yukon	25 50 100 300	4 weeks 8 weeks 12 weeks 16 weeks	

Source: Canadian Labour Market and Productivity Centre

COUNTRY	DEFINITION OF COLLECTIVE DISMISSALS	NOTICE REQUIRED
Belgium	Within a 60-day period a) 6 workers in 20-59 employee firms b) 10% of workforce in large firms	30 days
Denmark	Within a 30-day period a) 10 workers in 21-99 employee firms b) 10% of workforce in 100-299 employee firms c) 30 workers in ≥ 300 employee firms	30 days
France	Within a 30-day period a) 2 workers in firms of ≥ 11 employees	45 days and up
Germany	Within 4-week period a) workers in 21-49 employee firms b) 10% of workforce or greater than 25 workers in firms employing 50-499 workers c) 50 workers in ≥ 500 employees firms	30 days
Greece	2-10% of the workforce in firms normally employing ≥ 50 employees (percentage changes each year)	30 days
Ireland	Within a 30-day period a) 5 employees in 21-49 employee firms b) 10 employees in 50-99 employee firms c) 10% of workforce in 100-299 employee firms d) 30 employees of ≥ 300 employee firms	
Italy	On the same date 2 workers in any firm employing ≥ 10 workers	22 to 32 days
Luxembourg	Within a 30-day period, 10 workers Within a 60-day period, 20 workers	60 to 75 days
Netherlands	Within a 3-month period 20 workers	30 days
Sweden	5 workers	2 to 6 months
United Kingdom	1 worker	30 to 90 days (if at least 10 workers are involved)
United States	Employers with 100 or more workers	60 days

Source: Canadian Labour Market and Productivity Centre and notice legislation in various jurisdictions.

requirement is for 8 weeks for a layoff of 50 to 199 workers, 12 weeks for 200 to 499 workers and 16 weeks for 500 or more.

Ontario is not the strictest jurisdiction in regard to the minimum number of workers to be laid off for an advance notice of mass termination. Quebec and Nova Scotia stipulate that a layoff of 10 is a mass layoff and require 8 weeks' notice, while the Northwest Territories and the Yukon regard 25 as a mass layoff requiring notice of 4 weeks. Many European countries have thresholds as low as 10 employees. Layoffs involving 10 to 49 employees can cause major problems for those affected and for their reintegration into the labour market. In light of the overwhelming evidence of the importance of long notice periods, especially in the case of very large layoffs, consideration should be given to lengthening the notice periods for layoffs of over 50 workers. The threshold for firms required to provide the statutory minimum of eight weeks' notice should be lowered to include those layoffs involving less than 50 employees.

RECOMMENDATION 25: **Improving Advance Notice Provisions**

Ontario should lower advance notice thresholds to include permanent layoffs of 10 to 49 workers. Consideration should also be given to increasing notice periods for all mass layoffs.

The Council believes that it is particularly important that large firms give notice beyond the current 16 weeks statutory minimum. Recognizing that the objective of longer notice is not to add to the financial burden of firms but to trigger effective adjustment for workers, the Council recommends that large firms not be subject to 'pay in lieu of' obligations upon providing longer notice.

The Council recognizes that in cases of mass layoffs where workers receive Supplementary Unemployment Benefits (SUBs) during layoff and are ultimately recalled to work, more stringent notice periods would not be useful and might in fact force companies to place workers on a kind of permanent notice that might do them more harm than good. The Council is also sensitive to the reality that the regulatory environment with respect to layoffs and closures is a factor in determining the province's attractiveness for new businesses to locate within its borders. It is therefore essential to consider carefully any changes to notice provisions that might ultimately prove counter-productive to Ontario's interests.

ADJUSTMENT COMMITTEES

Experience in Ontario and elsewhere has demonstrated that one of the most important mechanisms for ensuring a successful adjustment process in mass layoffs and plant closings is the establishment of plant-level labour-management adjustment committees. In unionized facilities, these must be negotiated between employers and trade unions; in non-unionized plants, they can be established by agreements between management and a committee of elected workers.

Currently, bipartite committees under the federal Industrial Adjustment Service are set up in less than half of all major plant closures in Ontario reported to the Ministry of Labour. Effective committees require that both employers and employees be willing to participate, but the existing mechanism to encourage the creation of such bipartite adjustment committees is weak. Upon notification of a mass layoff, the IAS or the Ontario Employment

Adjustment Branch will contact the employer and employee groups to offer assistance; however, plants are not required to participate.

In West Germany and in Sweden, employers are compelled to negotiate with employees. While there are, admittedly, dramatically different industrial relations systems governing employment relationships in those countries, in Ontario there is a well-established precedent in labour relations -- the obligation to bargain in good faith under the *Labour Relations Act*. This does not compel both parties to agree, and mechanisms exist to attempt to resolve disputes. Nevertheless the Council believes that the concept of "duty to bargain in good faith" should be extended to cover all major adjustment situations. In this way, management and workers would be required to establish an adjustment committee and develop adjustment plans consistent with the Code of Best Adjustment Practice. These committees could plan for closure, obtain and coordinate counselling, education and retraining assistance, as well as use community contacts and resources to identify new jobs and assist displaced workers in securing those jobs. In addition, adjustment committees could address health problems, coordinate financial assistance to workers and help lift morale.

RECOMMENDATION 26: **Establishing Workplace Adjustment Committees**

Employers and employees in workplaces facing mass layoffs or closure should be required to establish bipartite workplace adjustment committees to facilitate counselling, retraining and new employment for displaced workers.

Bipartite workplace committees should also be required to plan and arrange for retraining where the job requirements of a significant number of employees are affected by technological change.

ADJUSTMENT SERVICES

Current responsibilities for providing government assistance in plant closings and large layoffs are jointly shared by Ontario and the federal government. The Council believes that the adjustment responsibility should remain a joint one, but that the province must exercise more leadership in coordinating and targeting assistance. This approach is justified because of the magnitude and the speed of adjustment facing Ontario's industries. Federal support is neither quick enough nor comprehensive enough to be adequate, and the provincial resources dedicated to the task are much too thinly spread. Evidence from other countries suggests that central coordinating mechanism is an essential element of an effective labour adjustment framework.

RECOMMENDATION 27: **An Ontario Workplace and Community Adjustment Service**

An Ontario workplace and community adjustment service should be created under the auspices of the Ontario Training and Adjustment Board to assure that appropriate public and private resources are promptly deployed to assist workers and communities suffering from mass layoffs and plant closures.

The Ontario Workplace and Community Adjustment Service (OWCAS) would become the front-line provider of

adjustment services in the province and take clear responsibility for ensuring that public sector resources (provincial and federal) were mustered promptly in all major layoffs and closings. Specific responsibilities of the Workplace and Community Adjustment Service would include:

- Contacting management and workers immediately after notice of layoff or closure is received to assure that in all instances of major layoffs a workplace adjustment committee has been established;
- Facilitating the establishment of adjustment committees;
- Providing funding jointly with the federal government for workplace adjustment committees, special sectoral committees or community-based adjustment for use in counselling, retraining, basic skills education, entrepreneurial training, job placement and relocation assistance;
- Working with the local officials and adjustment committees to ensure that federal income support is available to the unemployed and those in retraining programs, as well as ensuring that all other federal and provincial adjustment assistance is made available and is effectively coordinated;
- Advising the bipartite workplace committees throughout the adjustment process on issues such as where certain types of training are available, what job location techniques are most successful and how best to tap community resources outside the company and union.

To perform the above roles successfully, the Workplace and Community Adjustment Service could absorb the Employment Adjustment Branch of the Ministry of Labour, which currently offers a highly competent, but small-scale level of service in firm closing situations. Some additional staff and financial resources would be required for the Workplace and Community Adjustment Service to fulfil its mandate. Further study is required to determine how the OWCAS can best interact with the federal Industrial Adjustment Service. The Council sees OWCAS as a more comprehensive but still complementary service to the IAS.

A second role of the Workplace and Community Adjustment Service would be to facilitate and fund sectoral and community-based adjustment committees in those industries and regions where industrial restructuring is expected to result in sustained high levels of layoffs and plant closings. There are particular adjustment situations where the Workplace and Community Adjustment Service could play such a role:

- **Sectoral Adjustment Committees** – These would be industry-based bipartite committees formed to help manage labour adjustment in their sectors. (The Canadian Steel Trade Employment Congress mentioned earlier in this chapter is an example of such a group.) The formation of these sectoral committees would be encouraged by the Ontario Training and Adjustment Board (OTAB) in industries undergoing extensive and sustained restructuring. The Workplace and Community Adjustment Service would assist sectoral committees to form and would facilitate their activities. The OTAB would provide funding to the committees for adjustment activities, hopefully with federal government matching funds. Some of the sectoral

training committees formed under the OTAB would perhaps take on this sectoral adjustment role as well.

- **Community Adjustment Committees** – Some communities or regions will suffer multiple closings and may want to form community-based adjustment committees that include a cross-section of local groups. The Sudbury Community Adjustment Project discussed earlier is an example of such an effort. The Hamilton-Wentworth area has proposed a similar community-wide adjustment committee. Such locally stimulated efforts can be very effective in coordinating community resources in support of displaced workers. For example, a community adjustment committee would likely have representation from across the local business community which could be a source of tremendous support for identifying new job opportunities for displaced workers.

The OTAB would provide funding to community adjustment committees that put forward sound and compelling proposals. The funds would be available for a set time — say 18 months — and could be renewed if conditions justified it. The Workplace and Community Adjustment Service would assist the community-based committees with developing programs and identifying resources.

- **Single-Industry Towns.** The Ontario Workplace and Community Adjustment Service would facilitate the creation of an adjustment committee and program to assist displaced workers and to encourage economic diversification where feasible. These committees could be funded jointly by the OTAB and the federal government.

Clearly, the proposed Ontario Workplace and Community Adjustment Service can only be successful if it works closely with existing federal programs. The province itself needs a clear commitment to action on plant closings and major layoffs, but it is inconceivable that Ontario could act alone on adjustment. The federal government must be asked to join as a full partner in these efforts.

The long-run objective of the Workplace and Community Adjustment Service should be to encourage the development of labour adjustment skills and resources at the local level. The Service must take responsibility for responding to immediate plant closing crises, while at the same time encouraging the development of sectoral and community level programs that foster longer-term and more anticipatory action to ease restructuring and adjustment. As the overall guiding force for training and adjustment, the OTAB must ultimately give shape to these longer-term objectives and mechanisms for achieving a stronger adjustment infrastructure.

DIVERSIFICATION FOR SINGLE-INDUSTRY COMMUNITIES

When the major industry in a single-industry community closes or restructures, substantial dislocations of workers occur. Elliot Lake is one example of an Ontario town where recently announced mine closings in the uranium sector will cause untold problems for the workforce and the local economy. In such cases, the efforts of the Ontario Workplace and Community Adjustment Service must be augmented by funding to allow the community to diversify its economic base and create new employment prospects.

CREATING NEW RESTRUCTURING OPTIONS

RECOMMENDATION 28: Diversification for Single-Industry Communities

A dedicated fund for economic diversification and restructuring should be established to assist single-industry communities with their particular adjustment needs.

The Ontario Workplace and Community Adjustment Service could advise on and facilitate the disbursement of funds for sound local restructuring plans.

In some cases, plant closings may be prevented in whole or in part by exploring other options for restructuring. Firms which might not be viable in the hands of one owner might be operated profitably by another, particularly if an informed workforce is involved in the ownership. In its first report, the Premier's Council endorsed the concept of worker ownership as a means of facilitating restructuring and improving competitiveness. It can also be a way to reduce job loss while broadening the meaning and scope of employment.

The Council believes that there is a need to create new restructuring options for workers and their firms. Ontario has had an Industrial Restructuring Commissioner who has reportedly not played an active or effective role in the adjustment process beyond studying a few sectors that are undergoing restructuring. What is needed is a more responsive restructuring and adjustment unit linked to the Ontario Workplace and Community Adjustment Service.

RECOMMENDATION 29: A Restructuring Options Unit

Ontario should establish a restructuring options unit as part of the Ontario workplace and community adjustment service to assist workers and communities in exploring viable restructuring alternatives for plants that are closing.

The Restructuring Options Unit would take the initiative in responding to requests from companies, workers, unions or communities to investigate various restructuring options as an alternative to a firm closure. The director of the unit could be a high-profile person with business and entrepreneurial skills who could intercede when asked by the parties involved in a plant closing or by the OTAB. This unit would play a facilitation role in:

- Exploring options for securing new owners for the facility facing closure;
- Assisting workers in exploring non-traditional adjustment options, including worker buyouts, by helping to locate and secure financial and strategic advice;
- Making funds available to workers for commissioning expert studies of the feasibility of an employee business buyout when justified or appropriate;
- Arranging for workers to receive necessary training in worker co-operative business management to ensure that employee ownership is pursued as an informed and feasible undertaking;
- Studying the feasibility of an employee equity loan fund financed by the province to assist workers in forming worker-owned businesses.

TOWARDS A NEW LABOUR- MANAGEMENT VISION

The Restructuring Options Unit could also undertake longer-term studies of the restructuring prospects in particular industries and, working with the Ontario Ministry of Industry, Trade and Technology and the Ministry of Labour, develop an early warning system to identify potential trouble spots well before closings are announced. The Restructuring Options Unit would be located in the OWACS, but it will need to develop a significant profile and business orientation to be effective.

In the majority of cases where this advocacy unit is called in, there will be few truly viable new options to avert a plant closing. However, in a small but important number of cases, (as the U.S. steel industry experience indicates) it may be possible to save jobs and successfully restructure plants or firms which would otherwise close. Creating those options for workers is an important aspect of building the social consensus necessary to sustain successful economic restructuring in the province.

The Council's recommendations for dealing with restructuring and worker dislocation form a comprehensive and innovative approach to adjustment in Ontario. In partnership with the federal government, Ontario should be able to offer its workers, firms and communities full and timely assistance in managing the dislocations caused by industrial restructuring. This commitment to managed change will be important, not just for labour market fairness and efficiency reasons, but because in the long run Ontario must build a high-skilled workforce capable of sustaining a high wage economy. An aggressive labour market policy can play a significant role in assisting Ontario companies and workers to move to higher value-added products and markets.

There is nothing inevitable about the outcomes of an industrial restructuring process. The competitive pressures from the Canada-U.S. Free Trade Agreement and the wider global restructuring underway in both high-wage and low-wage economies can leave Ontario better or worse off. A labour market strategy aimed at fostering rapid restructuring upwards to higher value-added, high-wage business segments must be a fundamental building block of any provincial strategy designed to ensure a successful outcome.

The Council's labour market vision revolves around a fundamentally new relationship between management and labour. It anticipates a healthy industrial relations environment in Canada in which it will be possible to define new and broader roles for management and labour.

The requirement to form adjustment committees for mass layoffs and closings will build on a growing recognition in firms and in the workforce that management and labour have a mutual interest in trying to develop strategies to deal with adjustment and dislocations. This framework and the supporting recommendations above should encourage companies to view their hourly workers as people to be retained and redeployed, rather than laid off when jobs disappear. As such a shift begins to occur, the pressures from unions to maintain complex and rigid job classifications should diminish.

Job security can never be completely guaranteed at the firm level, but a greater degree of corporate commitment to internal redeployment can be built into the system. The Council urges the Ontario government, perhaps through the OTAB, to give careful study to what additional incentives might encourage internal redeployment of workers. Options which should be looked at

include the possible use of tax-free adjustment reserve accounts that companies might be able to finance in good times in anticipation of downturns or restructuring.

To encourage companies and their workforces to move towards an industrial relations environment that is conducive to employment security and positive adjustment, the Council also suggests that employers and employees attempt to exceed, wherever possible, the minimum requirements for adjustment practice set out under statute. In this spirit, the Council believes that employers and employees should adhere to a Code of Best Adjustment Practice. For employers, the key elements of this Code should include:

- Creating internal redeployment plans which allow workers to be retrained and redeployed within the company whenever possible;
- Providing the maximum amount of notice possible in closure situations — in excess of the statutory requirements where possible;
- Actively supporting the establishment of workplace adjustment committees in mass layoff situations and working with all stakeholders to secure financial support for their activities;
- Where appropriate, working with workers and other stakeholders in the examination of restructuring possibilities, including worker buyout options;
- Providing notice of technological change that will result in major layoffs and adjustments;
- Ensuring that workers on notice have access to training and counselling during working hours to the greatest extent possible;
- Cooperating fully in efforts to develop and assess alternatives to closure and permanent layoff.

The specific responsibilities for labour under of a Code of Best Adjustment Practice should include:

- Participating with employers in defining internal redeployment models with retraining support;
- Actively supporting and participating in the formation of adjustment committees;
- Working with employers, financial institutions, government and community investors to explore new ownership options for restructuring viable plants and firms;
- Using affiliated trade union relationships to identify re-employment opportunities in the same sector or related sectors.

Industry associations and central labour bodies should show leadership in:

- Mobilizing efforts to establish workplace adjustment committees in permanent layoff or closure situations;
- Developing industry training programs to fit the adjustment needs of affected workers;
- Coordinating placement efforts within an industry or region;
- Assisting the formation of bipartite sectoral adjustment committees to facilitate the labour adjustment process;
- Encouraging the development of internal redeployment models of adjustment;
- Promulgating and encouraging endorsement of the Code of Best Adjustment Practice.

While the above recommendations represent the key elements in the development of a new framework for adjustment in Ontario, the success of any system will depend on the adequacy of the basic system of supports for adjustment provided through federal and provincial programs. Many of the programs and services that form the basic system, such as unemployment insurance, are critically important to workers who become unemployed as a result of a large closure. The underpinnings of any system of labour adjustment include a sound income security system, programs to assure that dislocated workers have access to training and a system of counselling and placement that is integrated, undertakes effective diagnosis and offers access to flexible resources to make adjustment possible.

The current set of federal and provincial programs available to respond to layoffs large or small is ad hoc and inadequate. On paper, it may seem that there are substantial resources available to assist in plant shutdowns, but the reality experienced by many workers is that adjustment assistance is hard to come by and often not helpful. In addition, the current system of public supports for adjustment will be under increasing strain as the effects of global restructuring and the Canada-U.S. Free Trade Agreement buffet the Ontario economy. The need to respond quickly and effectively to changes in the labour market is thus critical to our future economic vitality.

The foundation for effective labour adjustment is a system of income protection which assures that workers who lose their jobs will not suffer overwhelming financial burdens. This is essential, not only on the grounds of fairness, but also because it will create a climate more favourable to change.

Many workers in Ontario have suffered the indignity of a firm closure and the loss of their job without compensation for work they have already performed. Ontario lags behind several jurisdictions in the statutory protection of wages it provides to workers whose employers go bankrupt or into receivership, abandon unprofitable operations, or continue to operate but refuse to pay wages. The inadequacies of the current legislation were highlighted in the 1985 report of the Brown Commission.

There are three ways to protect wages: 1) a deemed trust or statutory lien on wages, which in effect gives the workers preferred creditor status, 2) legal action for personal liability against the directors and officers of a corporation for wages and 3) a wage protection plan that would pay employees' claims and attempt to recover these amounts from employers.

The provincially created deemed trust option is now applied in the case of vacation pay. However, a recent supreme court ruling has determined that the deemed trust option no longer applies in the case of bankruptcies, which are federally regulated. The second option, legal action for personal liability, has the potential to recoup wages owed, but involves considerable time in court action, an unsatisfactory process when workers invariably require all the support they can get as rapidly as possible. Only the third option offers speedy and certain wage protection to workers, with costs to government reduced through effective legal action pursued by government.

The point of a wage protection plan would not be to shift the responsibility for providing wages onto government. Nor is it an insurance system for bad employers. It is to assure that workers do

not suffer any undue income loss at a time when they are particularly vulnerable. A wage protection plan should be regarded as an advance or prepayment to employees by government, with the responsibility on government to pursue defaulting employers using whatever legal means are available. Financing for wage protection advances could come from general government revenues and be reimbursed ultimately through recoveries from legal action against offending employers.

Wage protection is a long-standing issue at both the federal and provincial levels. The federal Task Force on Adjustment reiterated the need for a federal wage protection program to be operated by Consumer and Corporate Affairs Canada. A wage protection plan has also been of some interest to the Ontario government. If the province proceeded with the creation of a wage advance plan, it could be integrated into a federal program when and if one were established.

Costs for such a plan have been estimated at approximately \$6-10 million net per year in Ontario after recoveries from employers and receivers. These costs represent total unrecoverable liabilities after all legal actions against employers have been exhausted. Of course, costs would be substantially higher than these estimates in a recessionary period when business failures increase dramatically. Of course, costs would also escalate if a wage protection plan were not designed in such a way as to minimize the chances for employers to abandon their responsibility to provide outstanding wages if a government plan were in place to do so for them. Thus, the aggressive legal pursuit of all outstanding monies owing to the government after advances to workers are paid must be an essential part of the program.

It is also essential that the federal government address this wage protection problem by ensuring that long-outstanding changes proposed to *The Bankruptcy Act* be made to assure that the claims of wage earners have priority over the claims of all other creditors in the disposition of assets of insolvent firms. The province of Ontario, for its part, should ensure that employers who are solvent but who refuse to pay wages and other benefits due are held personally liable and rigorously pursued.

RECOMMENDATION 30: Protecting Dislocated Workers' Legal Entitlements

Ontario should provide a wage protection advance to all workers who are owed earned wages, vacation pay, contributions to benefits and pension plans, termination pay and severance pay by employers who shut down and default on their legal responsibilities. Ontario must then vigorously pursue recovery of the funds by all legal means available.

Changes should also be made to the federal Bankruptcy Act to protect earned workers' wages by giving them priority creditor status.

In 1984 the federal government amended the *Unemployment Insurance Act* so that any payment of severance pay or return of contributions to a registered pension plan was considered income for purposes of calculating eligibility for U.I. Severance payments therefore reduce the overall U.I. benefits otherwise payable. This provision violates the fundamental principle of severance pay, which is that it represents compensation for a lost job and

accumulated skill — the latter for most workers is their principal asset. This adversely affects older workers in particular because they tend to have longer service, higher severance payments and a longer average duration of unemployment during which they require UI. It also restricts early retirement as a viable option for older displaced workers.

The Council believes that this provision interferes with the intent and function of severance pay and works against the adjustment process. Every major study of labour adjustment since 1984 has recommended that the federal government rescind this provision. The Council adds its voice to that of the Federal Advisory Council on Adjustment and the CLMPC Business-Labour Task Force on adjustment in opposition to it.

RECOMMENDATION 31: **Removing Penalties From Severance Payments**

The federal government should rescind the provision in the federal unemployment insurance act that treats severance pay as income for calculation of entitlement to unemployment insurance benefits.

The *Employment Standards Act* was amended in 1987 to mandate severance pay to long-service employees in the case of layoffs involving 50 or more employees or for employers with payrolls of \$2.5 million or more. This is admittedly one of the most generous provisions in Canada, where only the federal and Ontario labour jurisdictions have severance pay requirements. The 1987 parameters were set in recognition of the difficulties of extending severance pay requirements to small employers. Nevertheless, long-service employees (with a minimum of 5 years of service) in firms with payrolls of less than \$2.5 million face the same loss of job assets and accumulated skill as do those in larger firms. The province should endeavour to extend the severance pay requirement to all long-service employees.

All research on adjustment concludes that the most effective adjustment training is that provided to workers who face dislocation while under notice or as soon after layoff as possible. Furthermore, many retraining opportunities are lost because adequate income support is not available to workers who would benefit by retraining or basic skills upgrading. The restrictive criteria under U.I. make it a relatively unavailable form of income support while training. In some European countries U.I. benefits are actually increased if a worker on U.I. undertakes to train. The Canadian practice actually works against the adjustment process by making training a relatively inaccessible adjustment mechanism at a time when training and retraining are critically needed. Because federal and provincial training programs are generally aimed at employed workers or the long-term unemployed, this also works against the adjustment process for workers who are on notice or already laid off.

RECOMMENDATION 32: Training for Employees Under Notice

In order to make training accessible to unemployed workers and workers under notice, the federal government should extend the provision of benefits under Section 26 of the Unemployment Insurance Act to permit unemployed workers and workers under notice to receive U.I. benefits while undertaking training. All federal and provincial training programs should be accessible to workers who are on notice and those who are unemployed.

Workers should also be entitled to time off with pay for training undertaken in accordance with an adjustment plan and for job interviews arranged through the adjustment committee.

CONCLUSION

The Ontario Training and Adjustment Board will have the mandate to direct both the provincial training strategy and the labour adjustment system in Ontario. This gives to the OTAB a significant and potentially unwieldy mandate, but these are areas which nevertheless must be coordinated by a single body. One of the major problems with the current approach to training and labour adjustment in Ontario is the fragmentation of responsibility and the lack of accountability for performance. The OTAB will have the responsibility to provide clear and rational direction for Ontario's training and adjustment strategies and will be accountable to business, labour, government and the people of the province for its performance. With strong management and labour leadership, the OTAB should be able to facilitate a strong and continuing commitment to the success of its programs.



APPENDIX D

TRAINING AND TECHNOLOGICAL CHANGE IN THE AUTOMOTIVE PARTS INDUSTRY

THE PREMIER'S COUNCIL SURVEY METHODOLOGY

223

The automotive industry is one of Canada's most productive manufacturing sectors. Each year, it supports a \$13.5 billion parts industry and, according to federal government estimates, consumes 25 percent of the country's steel, 15 percent of its rubber, 13 percent of its aluminum and five percent of its plastics production. In Ontario, the industry is a significant contributor to the economy, employing over 120,000 people or about 12 percent of the province's manufacturing labour force.

The Premier's Council undertook a detailed examination of one segment of the industry, automotive parts manufacturing, to investigate how it is coping with the changing business environment. This study was undertaken as a follow-up to a similar analysis of the industry that was conducted in 1985. Both reviews involved a questionnaire and extensive personal interviews with auto parts manufacturers and some assemblers. Comparing the results of these two surveys provides a unique data base upon which to assess the human resource challenges facing the sector.

In the 1989 study, 107 companies, or 15 per cent of those who were mailed questionnaires, responded to the survey. In-depth interviews were conducted with 28 automotive parts manufacturers and assemblers. In 1985, responses were received from 170 firms, or 18 per cent of those surveyed. While respondents to the 1989 survey were primarily small and medium-sized employers, the 1985 study captured a higher percentage of larger companies employing 500 or more workers. In terms of sales volume, however, the two sample groups were quite similar.

Companies replying to the 1989 survey exhibited a higher degree of Canadian ownership and a lower level of unionization than those in the earlier study. Some analysts have suggested that this decrease in the number of unionized firms has been caused by the opening of non-union Japanese car assembly plants in North America, which have, in turn, encouraged the establishment of non-union Japanese parts manufacturers.¹ The increase in the quantity of foreign parts purchased by North American assembly companies surveyed has been an additional factor in the reduction of union coverage in the auto industry.

The mix of respondents by manufacturing process was quite similar for both surveys. However, a greater proportion of the

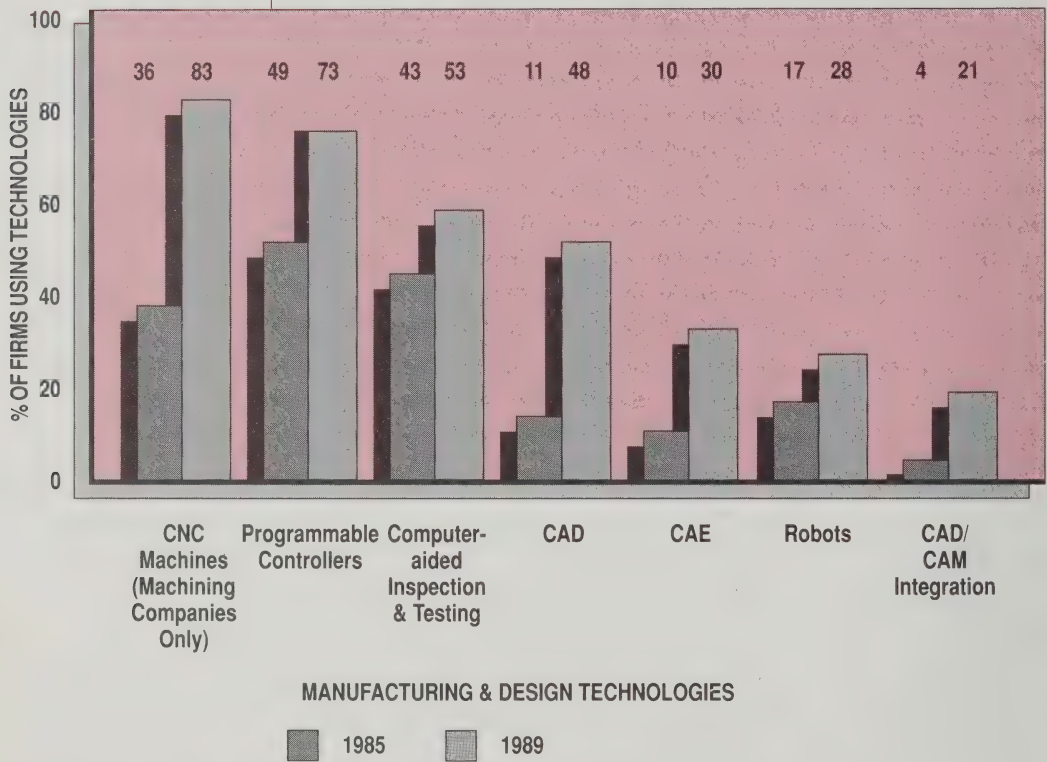
¹ Katz, Harry C., "New Developments in Union Structure in the U.S. Auto Industry" in Proceedings of the Thirty-Ninth Annual Meeting, Industrial Relations Research Association, Barbara D. Dennis ed., 1986.

companies surveyed in 1989 also made products for non-automotive markets, suggesting that companies are trying to diversify. This was confirmed in subsequent interviews. Companies engaged in auto-motive seating, for example, are now also producing office chairs.

THE ACQUISITION
OF NEW
TECHNOLOGIES

Automotive parts manufacturers are relying increasingly on new technology to improve productivity and enhance quality. Since 1985, the automotive parts industry has experienced a dramatic across-the-board increase in the adoption of manufacturing and design technologies (See Exhibit 1). The number of firms using computer numerically controlled equipment (CNC) has more than doubled, while the number using programmable controllers has grown by 25 percent. The use and integration of computer-aided design, engineering and manufacturing systems (CAD/CAE/

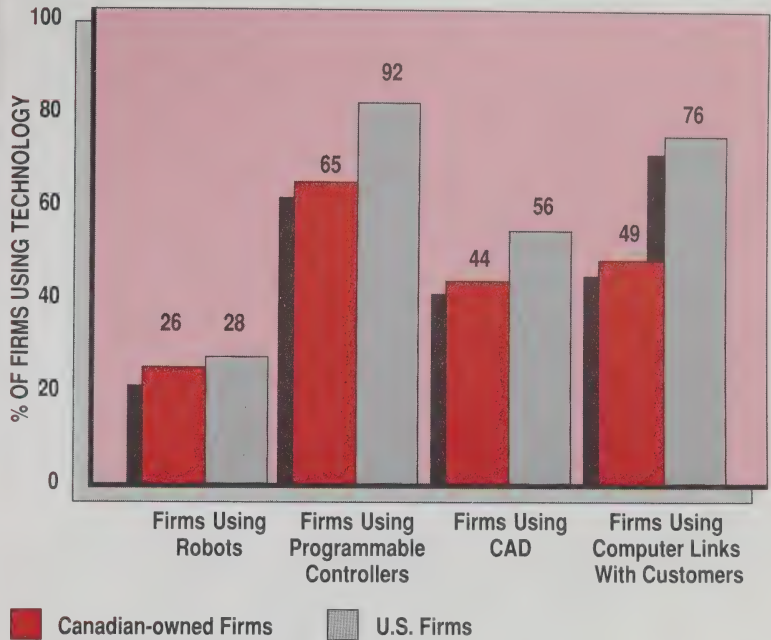
EXHIBIT 1 Adoption Of Manufacturing & Design Technologies



Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat.

CAM) has also increased substantially.

Much of this technological development has been driven by the automotive assemblers' policy of placing greater responsibility for certain functions, including quality control, on the parts manufacturers. Producers of air conditioning units, for example, are often required to provide design alternatives to performance specifications and cost parameters developed by vehicle assemblers. Manufacturers of interior door components are becoming involved in sub-assembly by managing the Just-in-Time (JIT) production and delivery of a specified quantity of component kits for vehicle manufacturers. In some instances, vehicle assemblers request the development and delivery of



Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat.

complete modules, such as instrument panels.

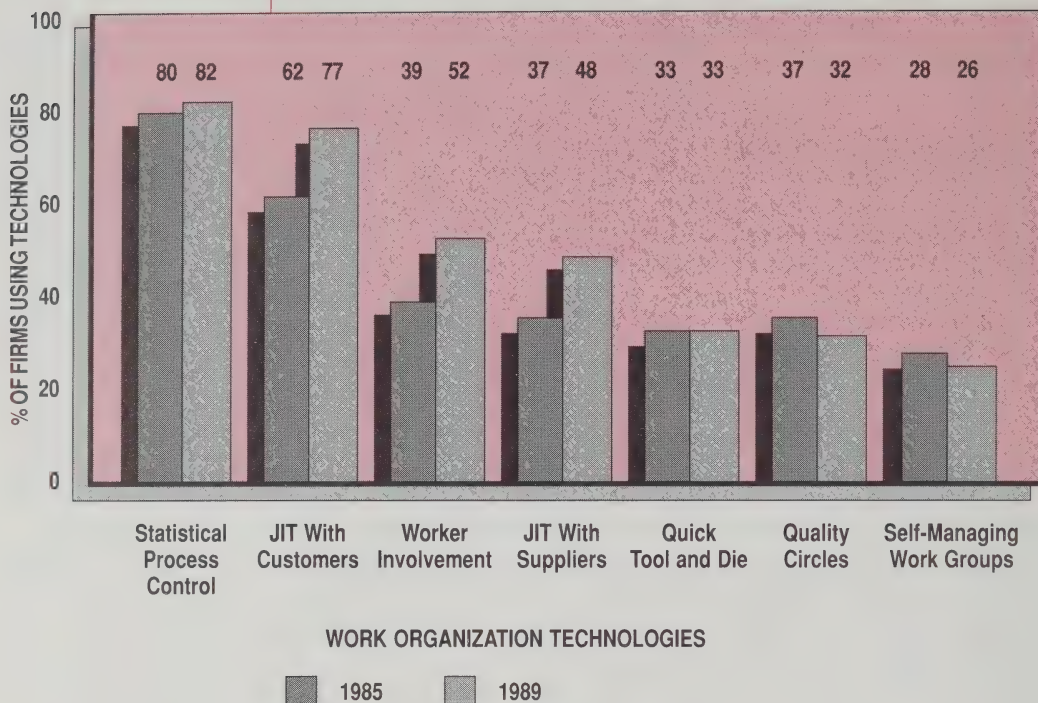
Canadian-owned firms continue to lag behind their American counterparts in adopting computerized technology (See Exhibit 2). In some technologies, such as robots, the difference is minimal. In others, such as programmable controllers and computerized links with customers, the uptake by American-owned firms is almost 30 percent higher than in Canadian companies.

Company size may be responsible for some of these differences. Canadian auto parts firms are generally not as large as U.S. companies and are therefore less likely to need sophisticated manufacturing and design technologies. In addition, the U.S. automotive industry has responded to foreign competition more quickly than have Canadian firms.

Companies that have adopted the new manufacturing and design technologies are finding that the organization and operation of their firms have been fundamentally changed. Hierarchical structures, made up of layers of discrete job functions, are giving way to more flexible, decentralized arrangements. Single task assembly line jobs are being replaced by multiple task teamwork where workers assume responsibility for quality as well as production.

Despite these changes, the adoption of work organization technologies such as Statistical Process Control (SPC), Just-In-Time, worker involvement and quick tool and die has lagged behind the introduction of manufacturing and design technologies (See Exhibit 3). In fact, the use of quality circles and self-managing work groups appears to have declined. Companies seem to have focused their efforts on acquiring a more efficient manufacturing process and coping with their increasing responsibilities in design, assembly and quality control. Little time has been left to examine the need for improvements in work organization.

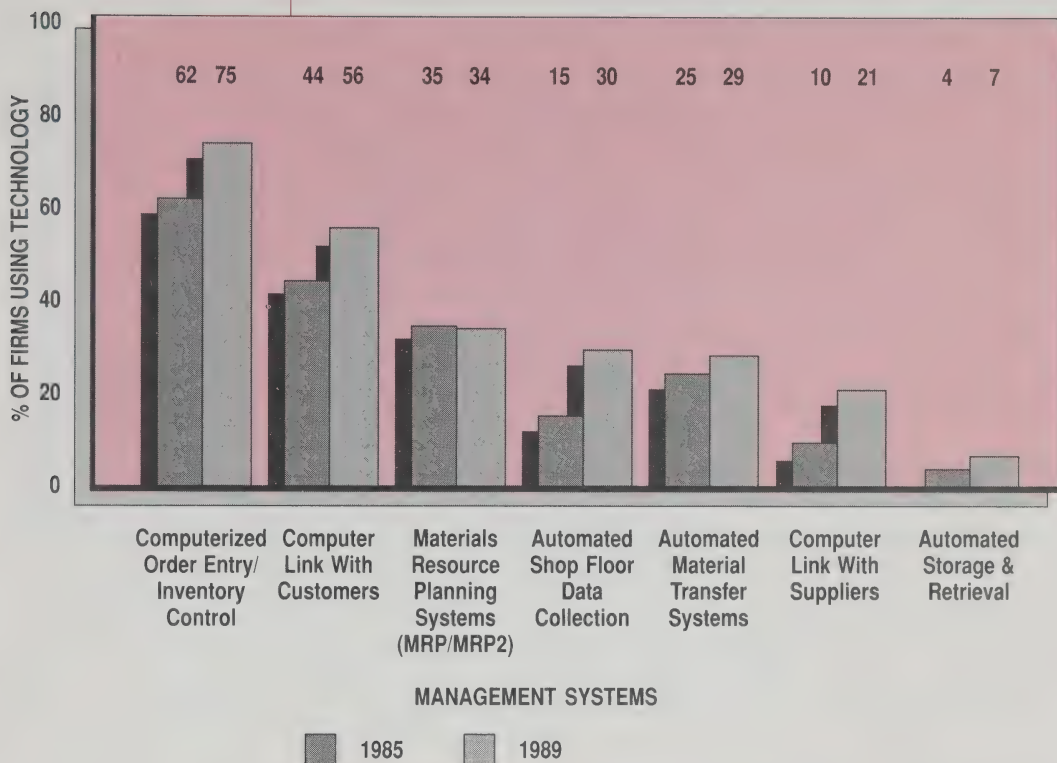
EXHIBIT 3 Adoption Of Work Organization Technologies



Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat

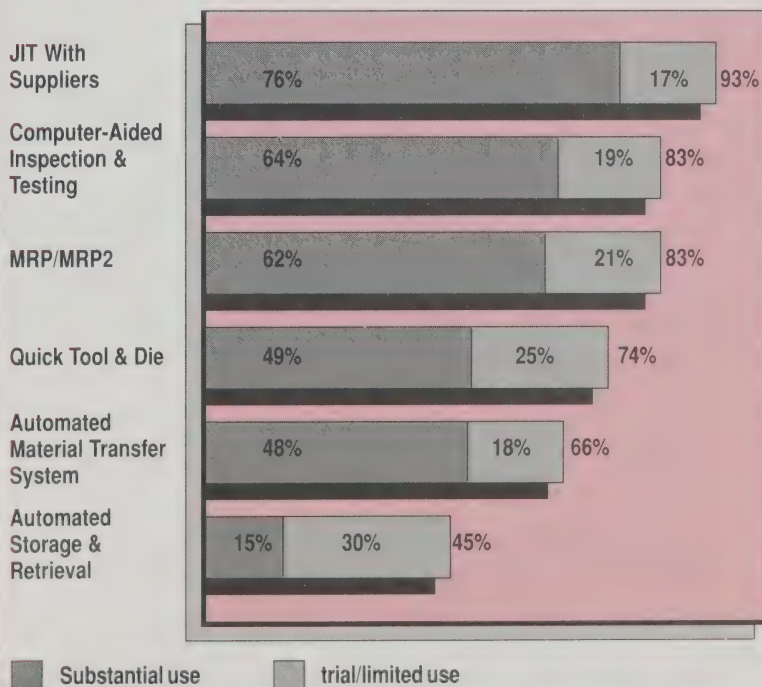
Similarly, the acquisition of advanced management systems has not been as dramatic as analysts had anticipated (See Exhibit 4). For some auto parts firms, the extensive restructuring that is occurring within the industry has created uncertainty about their relationship with the assemblers and a resulting reluctance to invest in new methods. For others, their size and scale of production may never justify the use of the more sophisticated management techniques. Nevertheless, the industry expects that many of these technologies will be widely used by 1995 (See Exhibit 5). Once the current wave of restructuring slows down and firms have had an opportunity to integrate their new manufacturing and design technologies, companies may pay more attention on acquiring advanced management systems.

EXHIBIT 4 Adoption Of Sophisticated Management Systems



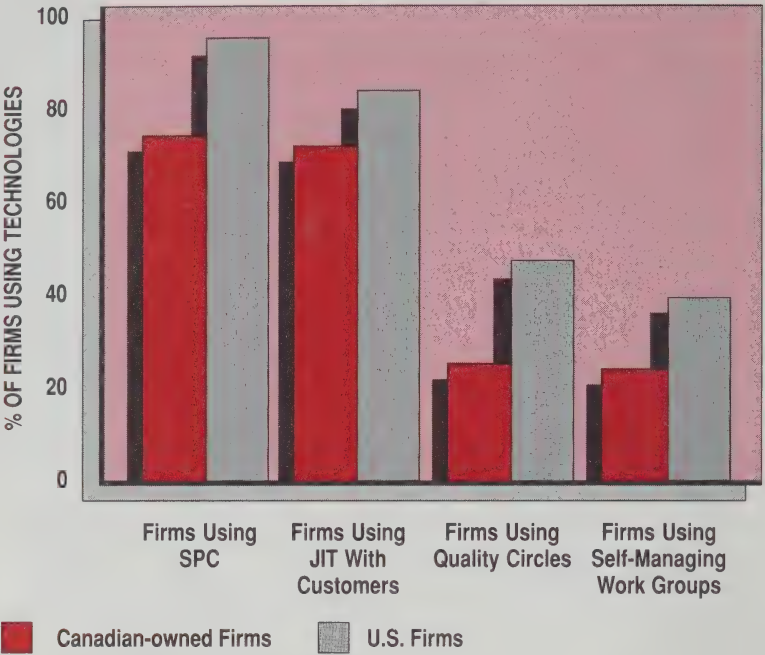
Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat

EXHIBIT 5 Manufacturing Technologies and Management Systems, Estimate of Utilization by 1995



Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat.

Use Of Work Organization Technologies in Canadian vs. U.S. Firms



Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat.

Just as with computerized technology, Canadian firms are lagging behind American-owned companies in the use of innovative work organization techniques (See Exhibit 6). Canadian assemblers have also been slower than their American counterparts to adopt new management systems. These differences may be explained by the relatively smaller declines in auto employment in Canada compared to the U.S. as well as the more traditional work attitudes and stronger opposition to concessions and Japanese-like work rules among the Canadian labour force.

Even though many assemblers in the U.S. have modern operating agreements in place, the performance of American autoworkers is not substantially better than their Canadian counterparts. Some analysts suggest that the more positive informal worker-management relationships that exist on the shop floor in Canada may be partly responsible for this better-than-expected performance.²

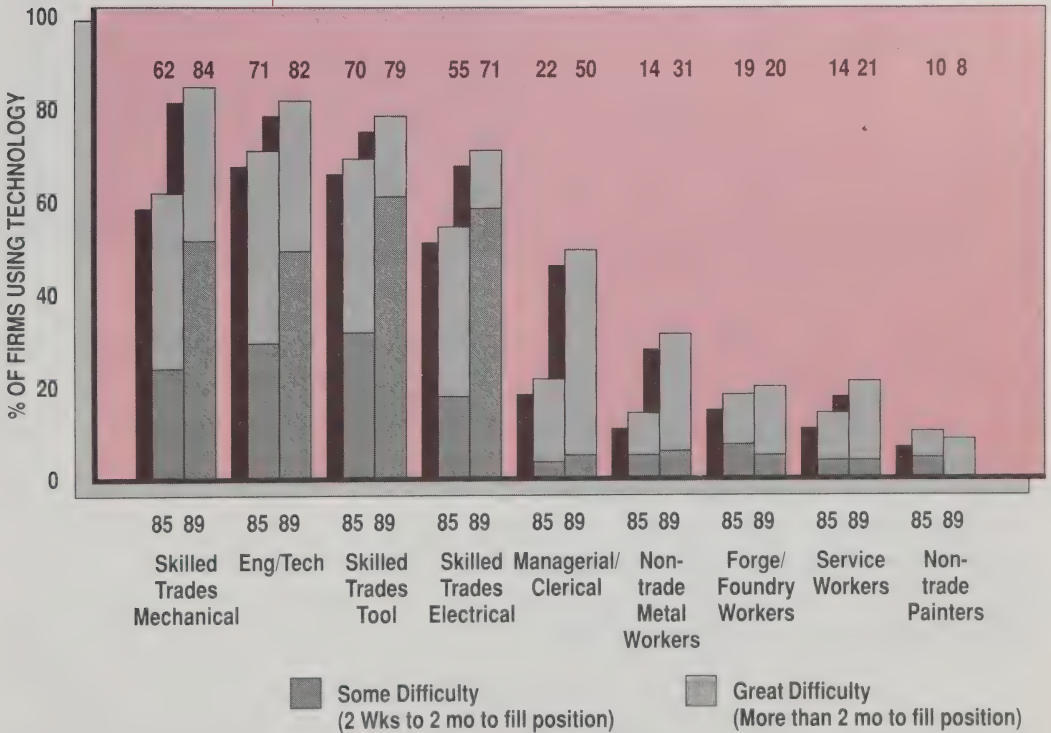
² Why People Count, Report of the Automotive Industry Human Resources Task Force. Employment and Immigration Canada. Ottawa Minister of Supply and Services, 1986.

New manufacturing technologies and changes in the organizational structure of firms are raising skill requirements, generally. A greater emphasis on teamwork, multi-role work units and the use of supplier networks means that workers must possess not only better basic skills like reading, writing and math, but also more sophisticated interpersonal and problem-solving capabilities.

While 44 percent of new jobs in 1986 required post-secondary education, this is expected to rise to 64 percent between 1986 and 2000.³ The Council's survey confirmed this trend. Between 1985 and 1989, the proportion of skilled workers in the automotive parts industry grew from 13 percent of the workforce to 25 percent. By 1995, it is expected to increase to 32 percent. Meanwhile, the number of unskilled jobs is expected to decline by about 40 percent, and 49 percent of the industry will be comprised of firms whose unskilled labour component represents less than 30 percent of their total workforce.

There is a growing gap between the skills that industry needs and the capabilities of the labour force. Companies are increasingly unable to find employees with the necessary skills to implement and operate the new manufacturing systems or achieve high quality and performance. During the interviews undertaken on behalf of the Premier's Council, many firms reported difficulty in hiring adequate numbers of skilled tradespeople, engineers and

EXHIBIT 7 Percentage Of Respondents Experiencing Hiring Difficulties—Previous Two Years



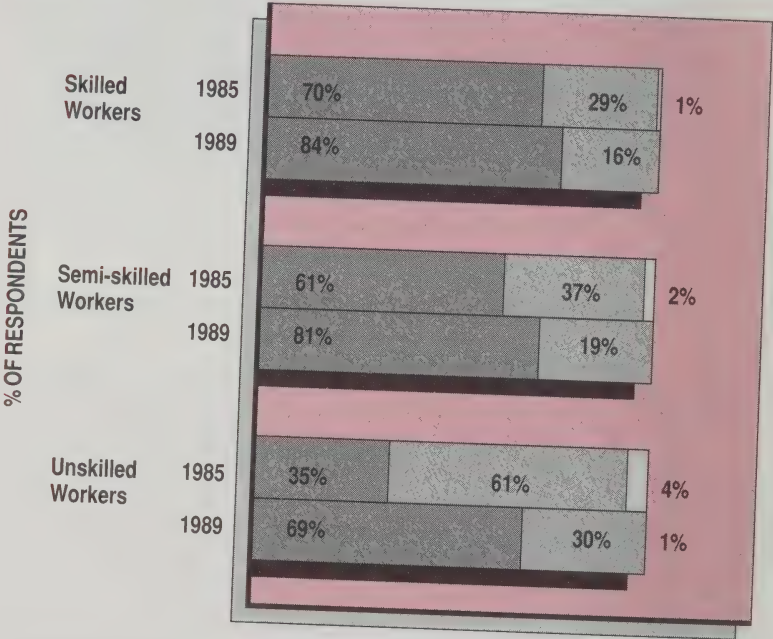
Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat.

³ Statistics Canada, Employment and Immigration Canada, Canadian Occupational Projection Systems (COPS).

technicians (See Exhibit 7). More than 50 percent of the survey respondents indicated that it took them over two months to fill a skilled trades position and 45 percent indicated similar difficulty in recruiting engineers and technicians. This problem has become worse since 1985. In fact, nearly 40 percent of the responding firms indicated that they had to either curtail operations or pass up business opportunities because of skill shortages.

New manufacturing and quality control technologies will continue to raise the basic reading and writing and math skills required of all workers (See Exhibit 8). Over the last four years, industry has found that a much higher proportion of new entrants into the workforce have inadequate reading and writing

EXHIBIT 8 Perception of Workers' Reading/Writing Skills



TECHNOLOGY IS:

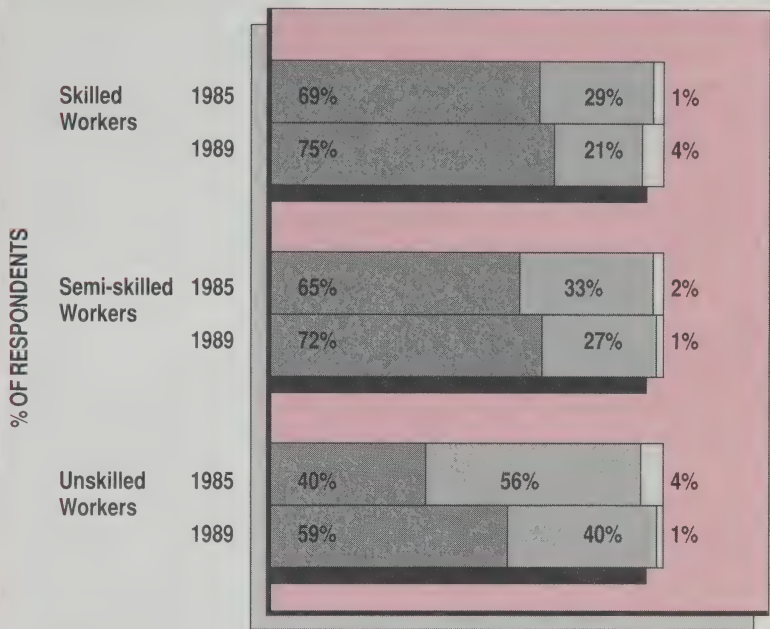
- Increasing the level of skills required
- Having no effect
- Decreasing the level of skills required

Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat.

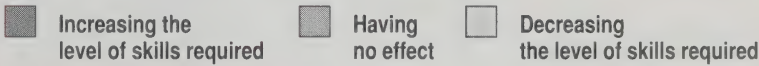
skills. According to the council's survey, fully 40 percent of all new entrant hourly workers are now considered to lack the necessary level of literacy for the job, up from 21 percent in 1985. During the same period, the proportion of current hourly workers with inadequate abilities in reading and writing remained unchanged. Technology is also increasing the level of mathematical skills required of all workers (See Exhibit 9). Yet, the mathematical ability of both current and new entrant workers was judged inadequate by 45 percent of the respondents to the survey. This likely reflects the growing demands of technology rather than declining abilities of auto workers or some failure of the education system.

EXHIBIT 9

Perception of Workers' Mathematical Skills



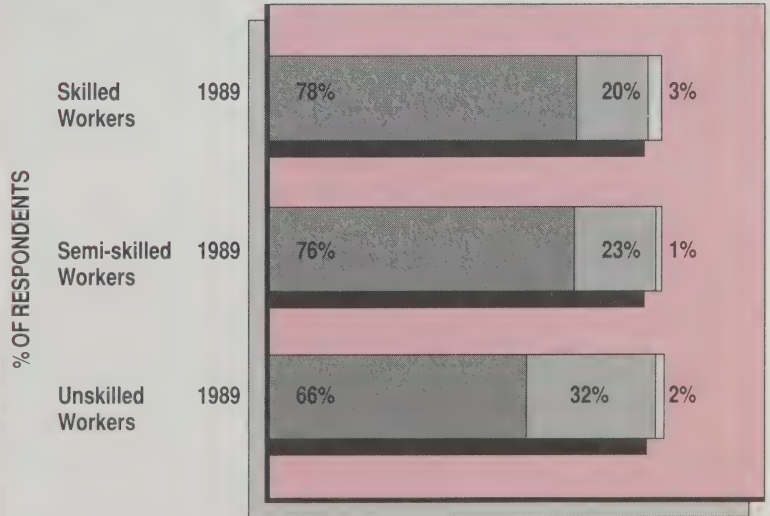
TECHNOLOGY IS:



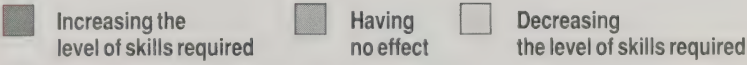
Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat.

EXHIBIT 10

Perception of Workers' Communication Skills



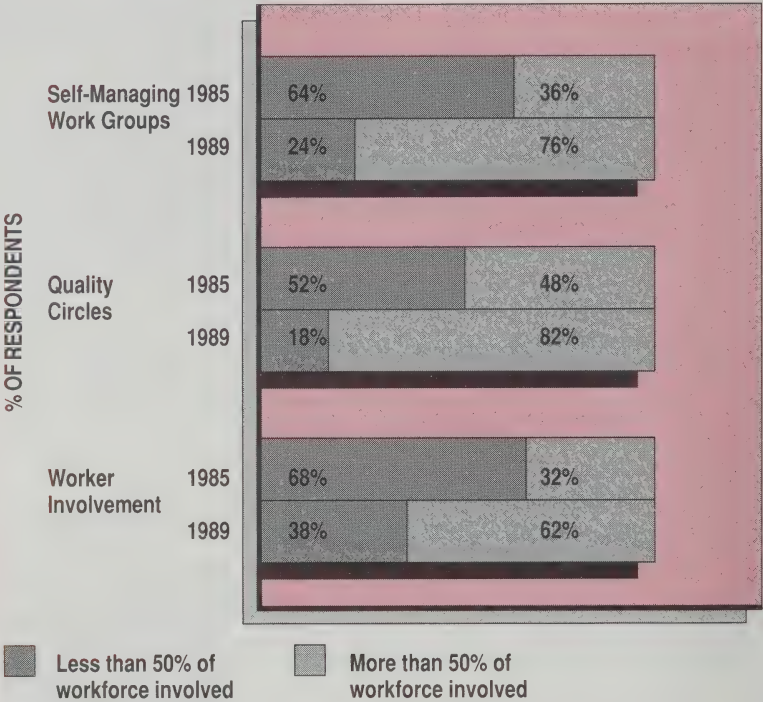
TECHNOLOGY IS:



Source: Survey of the automotive parts industry by Canada Consulting and the Premier's Council Secretariat.

The new organizational and management techniques require improved teamwork and communication skills (See Exhibit 10). A substantial number of the companies responding to the survey indicated that by the mid-1990s more than 50 percent of their workforce will be involved in such new organizational structures as self-managing work groups and quality circles (See Exhibit 11). Yet, 36 percent of the respondents judged the communication skills of current hourly workers as inadequate while 49 percent indicated the same for new entrants. This could seriously impair the industry's ability to adopt new organizational methods.

EXHIBIT 11 Introduction Of New Work Organization Structures and Techniques



**GROWING
DEMAND FOR
TECHNICAL SKILLS**

Computerized technologies like CNC machines and CAD systems require new and expanded technical skills from the workforce. Statistical process control and other work organization technologies require more general problem-solving skills and lead to greater involvement in production decision-making. These technologies are also driving up the skill requirements of what have traditionally been unskilled positions. Unskilled workers, for example, are having to learn SPC and to perform minor adjustments to machines. Similarly, many companies are reducing their management levels and expect their production workers to take on more responsibility.

New technology is moving the tool and die trades into higher skill areas by requiring the closer integration of design and shop floor functions. At Magna International Inc., for example, tool and die makers are having to learn computing skills and SPC. They are also working more closely with engineers and designers in developing new tools and dies and evaluating their performance.

The increase in automation has required tool and die makers to have a broader understanding of the entire manufacturing process.

The influence of new product and process technology will become even more pervasive. Its successful introduction will require workers to develop an understanding of production, machine operation and integration. Autosystems, a headlight assembler in Eastern Ontario, emphasizes the need for a multi-skilled production workforce, able to perform a number of different functions in molding, coating and assembly. DORTEC, part of the Magna group, regularly shifts tool makers into CNC programming, wire cutting, engineering, tool design using CAD and automation, and new process R&D. Production control increasingly requires computer literacy in key staff positions while post-secondary education with a background in technology is the minimum requirement in plants where workers must deal with SPC, Materials Resource Planning and other systems. Quality control today often integrates chemical and computer technology.

NEW LABOUR-MANAGEMENT METHODS

At General Motors in Oshawa, the introduction of automated guided vehicles (AGVs) to replace certain assembly line operations has created a new relationship between labour and management. Under the more traditional assembly line operation, workers were responsible for tasks which they performed relatively independently. The supervisor acted as the boss and drove productivity, which was tied to the speed of the line. To stop one vehicle meant shutting down production.

With the introduction of AGVs, workers are responsible for a variety of tasks and perform their functions as part of a team. In order to carry out their duties, they require analytical and interpersonal abilities in addition to the more traditional assembly skills. The supervisor's role has become that of a facilitator and resource person. Since the teams are responsible for quality, they control the flow of the products.

Tridon Ltd. has focused on creating an organization in which the workforce is increasingly self-managed. Employees have a broad set of responsibilities, including quality control, preventive and minor maintenance, the purchase of new materials, product application and scheduling. At Autosystems, the workers are referred to as associates and all employees, including production workers, are salaried.

THE INTEGRATION OF TECHNOLOGY AND HUMAN RESOURCE STRATEGIES

Research on productivity and quality in the automotive industry has underlined the importance of integrating technology, business and human resource strategies. Companies are finding that new manufacturing and design technologies introduced without corresponding changes in human resource policies are too often poorly implemented and utilized. Equally, human resource innovations become ineffective if they are not closely linked to technology and/or business strategies. A significant proportion of the respondents to the 1989 survey are beginning to place some emphasis on integrating their human resource and production activities. Some 25 percent of the survey respondents are putting in place advanced human resource strategies in conjunction with new production methods. However, many parts manufacturers continue to favour improving their production systems over upgrading their management of human resources.

The automotive industry has responded to the need for workers with better skills by introducing more rigorous hiring procedures and offering additional training for incumbent workers. About 25 percent of the respondents to the 1989 survey indicated that they used written tests, group interviews and problem-solving exercises as part of their hiring procedures. Companies are now taking a long-term view in their hiring policies and will assess the expectations of applicants in order to facilitate career development. They are also seeking to ensure a proper fit with the company culture. As a result, hiring ratios of one or two out of every ten applicants are common. General Motors, for example, hired 58 apprentices from 1,300 applicants in 1989. Such selectivity is a reflection of both higher demands and the high cost of employee turnover.

Prospective employees at Autosystems Ltd. must undergo an extensive process of evaluation that places a great deal of emphasis on people skills. During a series of four interviews, applicants are assessed for their personality, eagerness to work, teamwork, manual dexterity and attitude towards quality. The emphasis is on aptitude and ability rather than credentials.

Many other companies have similar hiring procedures that can include up to three days of tests, interviews and other methods of evaluation. These companies are often not interested in hiring unemployed individuals or workers with poor reading, writing or math abilities. Instead, they seek workers with sound basic skills, a positive attitude towards work and a willingness to be trained.

At General Motors, it is not unusual for apprentices to have their applications rejected several times before being hired. Most wait four or five years before being accepted into the company. In the past, apprentices hired at General Motors often came to the program with widely varying levels of skills, ability and educational background. In an effort to standardize the skills and abilities of all apprentices prior to sending them into the plant, General Motors, in cooperation with the Canadian Auto Workers, established the Apprenticeship Training Centre in August 1989. Initially, the Centre has focused on training machine repair apprentices, largely because they are in high demand and the company had ready access to good journeymen instructors in the machine repair trade.

The Training Centre provides a controlled environment in which to teach apprentices with minimal or out-of-date skills the basics of the trade. Apprentices enter the centre immediately upon being hired and embark upon a 15-week training program which combines classroom instruction with practical, hands-on training. The curriculum covers such areas as power transmission, machine operation, welding, pneumatics/hydraulics, and safety. Through this training, apprentices gain confidence in their ability and are better prepared to carry out their responsibilities on the plant floor. Supervisors, meanwhile, better understand the abilities of their apprentices.

While some companies try to improve the basic skills of their workforce, much of the training for auto parts production workers focuses on quality control, decision making and problem solving within a cross-functional team environment. Epton Industries has used the design of experiments as a training vehicle with great success. Employees working in teams comprised of both operations and engineering personnel can readily isolate those variables that influence quality and productivity. By utilizing this

technique, Epton won an award from General Motors for its extrusion process. The company's long-term goal is to achieve a cultural change within the organization that places a high value on quality and continual learning.

At Tridon, all employees are trained in problem solving and quality control techniques. SPC is used as a basis for teaching world-class manufacturing. The program stresses such issues as the identification of key elements in manufacturing and production, corporate philosophy, objectives and goals within an internationally competitive market environment. The results of this program have been an improvement in attitude, productivity and profits.

According to the Council's 1989 survey of auto parts manufacturers, fewer companies are delivering formal training programs than was the case in 1985 (See Exhibit 12).

EXHIBIT 12

**Parts Companies Delivering Formal Training
In Past Two Years**

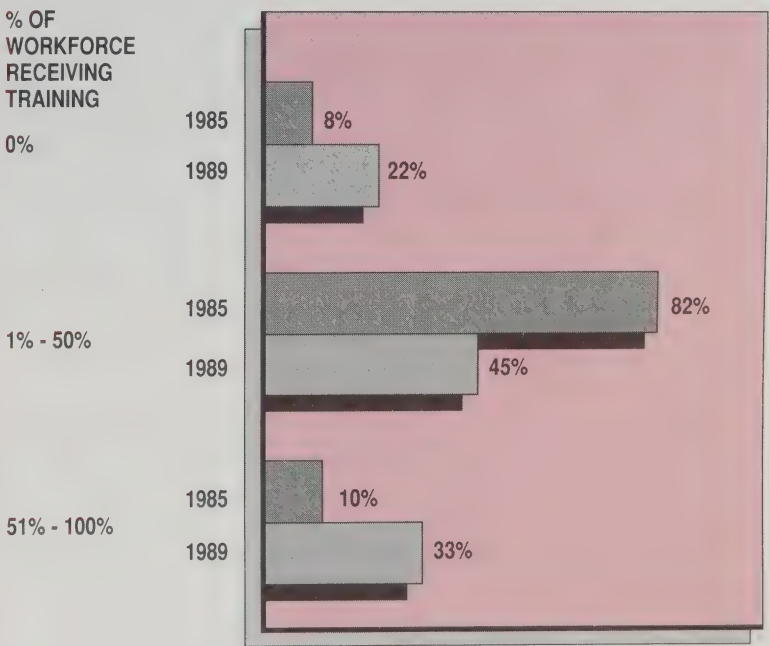
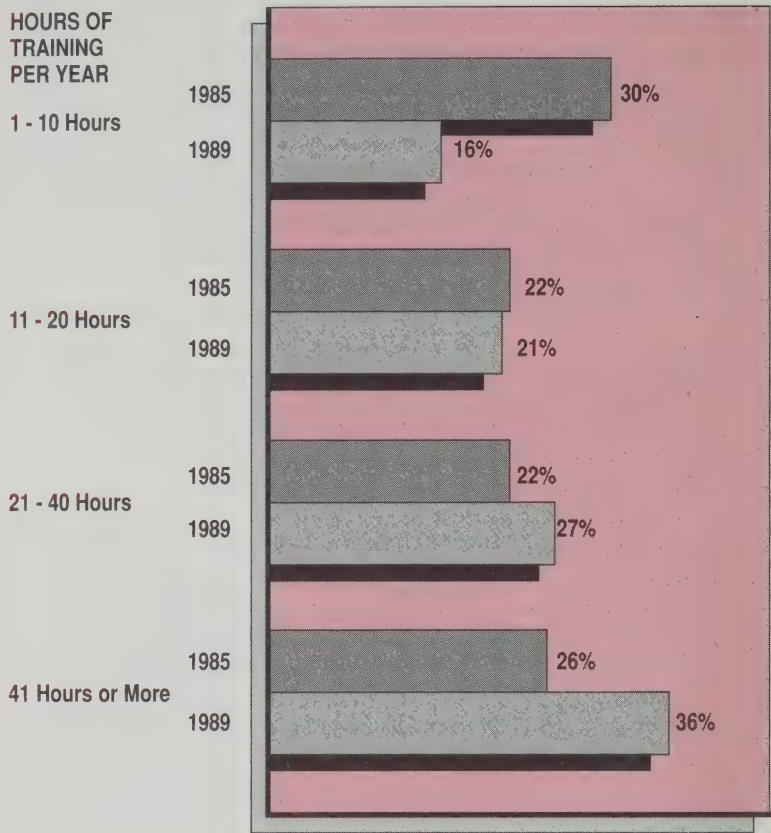


EXHIBIT 13 **Average Hours of Training Received**



Those companies that do train are training more of their workers and investing more time in it. (See Exhibit 13). Survey respondents in 1985 indicated that 27 percent of their workforce had received training in SPC. By 1989, this increased to 56 percent, with the expectation that it will reach 75 percent by 1995. It is expected that companies will increase their commitment to training as they adopt new work organization technologies and management systems.

Japanese auto parts manufacturers emphasize the importance of on-the-job training as a means of delivering skills to the shop floor and they employ full-time trainers to provide this instruction. Increasingly, however, short-term, off-the-job training is also being used for skills updating.

By contrast, North American manufacturers rely initially on off-the-job skills training for workers. On-the-job training is primarily used to reinforce those skills, usually by informal instruction from a co-worker. The more innovative companies will often use a training facilitator to coordinate and initiate specific training programs.

The Japanese and the more innovative North American auto parts manufacturers spend a considerable amount of time in orienting employees to their manufacturing environment and corporate culture. However, this practice is not yet widespread in the industry. Typically, North American companies expend limited

**STILL MANY
CHALLENGES**

effort orienting new workers or improving their production skills, and place even less emphasis on team building or interpersonal skills.

There appears to be a growing consensus within the industry that training is an effective response to technological change. However, there is a considerable debate regarding the content and delivery of that training. Business considers training to be a means of achieving and maintaining global competitiveness and emphasizes proficiency in specific tasks related to particular jobs. Labour views training as a means for workers to acquire a broad set of generic skills that enhance career opportunities and encourage personal development.

Confronted with intensified international competition, management and labour are searching for ways to lower costs and improve quality. Many parts companies are attempting to develop a partnership with labour and are introducing technological and organizational changes necessary to become more globally competitive. Foreign competition will continue to put pressure on parts manufacturers to improve productivity and be more cost-efficient. A company's ability to use new technology creatively and maintain a capable and well-trained labour force will largely determine whether or not it has a role in the future of this vital sector of the Ontario economy.



Ontario

Premier's
Council

Province of Ontario
Queen's Park
Toronto, Ontario
M7A 2E1

ISBN 0-7729-7320-2

© Queen's Printer for Ontario, 1990



Printed in Ontario.

Cover is printed on Acid-free recycled paper.

